Response Action Contract
For Remedial, Enforcement Oversight, and Non-time
Critical Removal Activities at Sites of Release or
Threatened Release of Hazardous Substances
In EPA Region VIII

U.S. EPA Contract No. 68-W5-0022

Final
Remedial Investigation Report
Georgia-Pacific Hardwood Site
Plymouth, North Carolina

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Executive Summary

The Georgia-Pacific Hardwood Sawmill Site (hereinafter referred to as the "Georgia-Pacific Site" or "the site"), is defined as the 24-acre area located on Plywood Drive within the city limits of Plymouth, North Carolina. Contaminants consisting primarily of dioxins/furans, polynuclear aromatic hydrocarbons, pentachlorophenol, pesticides, polychlorinated biphenyls, and a few heavy metals were released into the environment during past sawmill wood treating operations.

Soil, surface water, sediment, and groundwater samples, both onsite and offsite, were collected by Science and Ecosystem Support Division personnel. Sample analyses were performed by the EPA's Contract Laboratory Program. Dioxins and furans were analyzed by an EPA Special Purchase Agreement laboratory. Analytical results were validated by the Science and Ecosystem Support Division Quality Assurance personnel. The following is a summary of the analytical results:

- Analyses of soil samples collected indicate extensive contamination by dioxins/furans, polynuclear aromatic hydrocarbons, polychlorinated biphenyls, and inorganics. This contamination seemed to be focused in an area centrally located on the site property where most past operations were located. There was indication of offsite contamination from site related constituents, however the concentrations were lower than onsite concentrations.

- Surface waters at the site discharge into the Roanoke River. Analyses of surface water and sediment samples collected from the intermittent drainage ditches located onsite indicate contamination by arsenic and manganese in surface water, and by dioxins/furans, acetone, methyl ethyl ketone, polynuclear aromatic hydrocarbons, arsenic, lead, and zinc in sediments.

- The site is underlain by a shallow surficial unconfined aquifer. Groundwater flow at the site is likely toward the Roanoke River, where it discharges. Analyses of groundwater samples at the site indicate contamination by arsenic and manganese. Concentrations of some other contaminants such as aluminum, iron, and manganese are above Maximum Contaminant Levels (MCLs).

Following an initial review of the RI data, EPA prepared site specific removal action levels of nine constituents of concern and performed a removal action at the site. The removal action consisted of excavation of soil from contaminated grids and ultimately shipping soil, debris, buildings, and tanks offsite. During the removal action, BBL Environmental Service, Inc. personnel, hired by Georgia Pacific, with offices in Cary North Carolina, performed the sampling of the bottom and sides of the excavations to confirm compliance to site specific removal action levels. The site was then backfilled with clean soil.

Based on the results of the RI and considering the removal action data, the following actions are recommended:

- Remedial action objectives for soil and groundwater contamination at the site should be established based on human health exposure risks, as well as the potential for future contaminant migration from one medium to another (e.g., soils to groundwater).

- Alternatives for reducing soil and groundwater contamination at the site to achieve the established remedial action objectives should be evaluated, and the most cost-effective alternative for each implemented.

List of Acronyms

ASTs	Above ground storage tanks
bls	below land surface
BBLES	Blasland, Bouck & Lee, Engineers and Scientists, Inc.
BRA	Baseline Risk Assessment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code Federal Regulations
CLP	Contract Laboratory Program
COC	Contaminant of Concern
COPC	Contaminant of Potential Concern
cPAH	Carcinogenic Polynuclear Aromatic Hydrocarbon
cy	cubic yard
EPA	Environmental Protection Agency
FS	Feasibility Study
HSWA	Hazardous and Solid Waste Amendments
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
msl	mean sea level
MW	Monitor Well
NCP	National Contingency Plan
ND	not detectable
NPL	National Priorities List
OCDD	Octachlorodibenzodioxin
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCP	Pentachlorophenol
PRP	Potentially Responsible Party
QA	Quality Assurance
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
RPM	Remedial Project Manager
SAP	Sampling and Analysis Plan
SESD	Science and Ecosystem Support Division
SIP	Site Inspection Prioritization
SSI	Screening Site Inspection
SSRAL	Site specific removal action level
SVOC	Semi-volatile organic compound
TAL	Target Analyte List
TCDD	2,3,7,8 -Tetrachlorodibenzodioxin
TCE	Trichloroethene
TCL	Target Compound List
TEF	toxicity equivalent factor
TEQ	toxicity equivalent value
VOC	Volatile organic compound
2378TCDD TEQ	2,3,7,8 tetrachlorodibenzodioxin toxicity equivalent concentration

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Section 1
Introduction

1.1 Purpose of Report

The Georgia-Pacific Hardwood Sawmill Site (hereinafter referred to as the "Georgia-Pacific Site" or "the site"), is defined as the 24-acre area located on Plywood Drive within the city limits of Plymouth, North Carolina. Contaminants consisting primarily of dioxins/furans, polynuclear aromatic hydrocarbons (PAHs), pentachlorophenol (PCP), pesticides, polychlorinated biphenyls (PCBs), and a few heavy metals were released into the environment during past sawmill wood treating operations. The site was placed on the National Priorities List (NPL) in October of 1999. Having been placed on the NPL, a remedial investigation and feasibility study (RI/FS) of the Georgia-Pacific Site is thus required as promulgated by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan (NCP).

The purpose of the RI/FS process is to gather, as quickly and cost-effectively as possible, enough information about the site to support an informed risk management decision regarding which remedy appears to be most appropriate for the site. The RI serves as the mechanism for collecting data to characterize site conditions, determine the nature and extent of the waste, assess risk to human health and the environment, and conduct treatability testing as necessary to evaluate the potential performance and cost of the treatment technologies being considered. The FS serves as the mechanism for development, screening, and detailed evaluation of alternative remedial actions. The various steps, or phases, of the RI/FS process are briefly described below:

- Scoping - the initial planning phase of the RI/FS, including the preliminary assessment and site investigation

- Site Characterization - definition of the nature and extent of contamination, identification of applicable or relevant and appropriate requirements (ARARs), and development of the baseline risk assessment

- Development and Screening of Alternatives - identification of potential treatment technologies, screening of these technologies, assembly of the technologies into alternatives, and screening of the alternatives

- Treatability Investigations - bench- or pilot-scale testing to assess the feasibility of a technology

- Detailed Analysis of Alternatives - further refinement of the alternatives, analysis of the alternatives with respect to nine evaluation criteria, and comparison of the alternatives against each other.

The RI and FS are conducted concurrently so that data collected in the RI influence the development of remedial alternatives in the FS, which in turn affects the data needs and scope of the treatability studies and any additional field investigations.

The purpose of this report is to document the results of the RI field investigation performed by EPA for the Georgia-Pacific Site, and provide the information needed to perform a human health and ecological risk assessment assessing the impacts of contamination at the site, and a feasibility study evaluating potential remediation alternatives, if necessary. This document is submitted to EPA in accordance with Work Assignment No. 027-RICO-0401 under Contract No. 68-W5-0022.

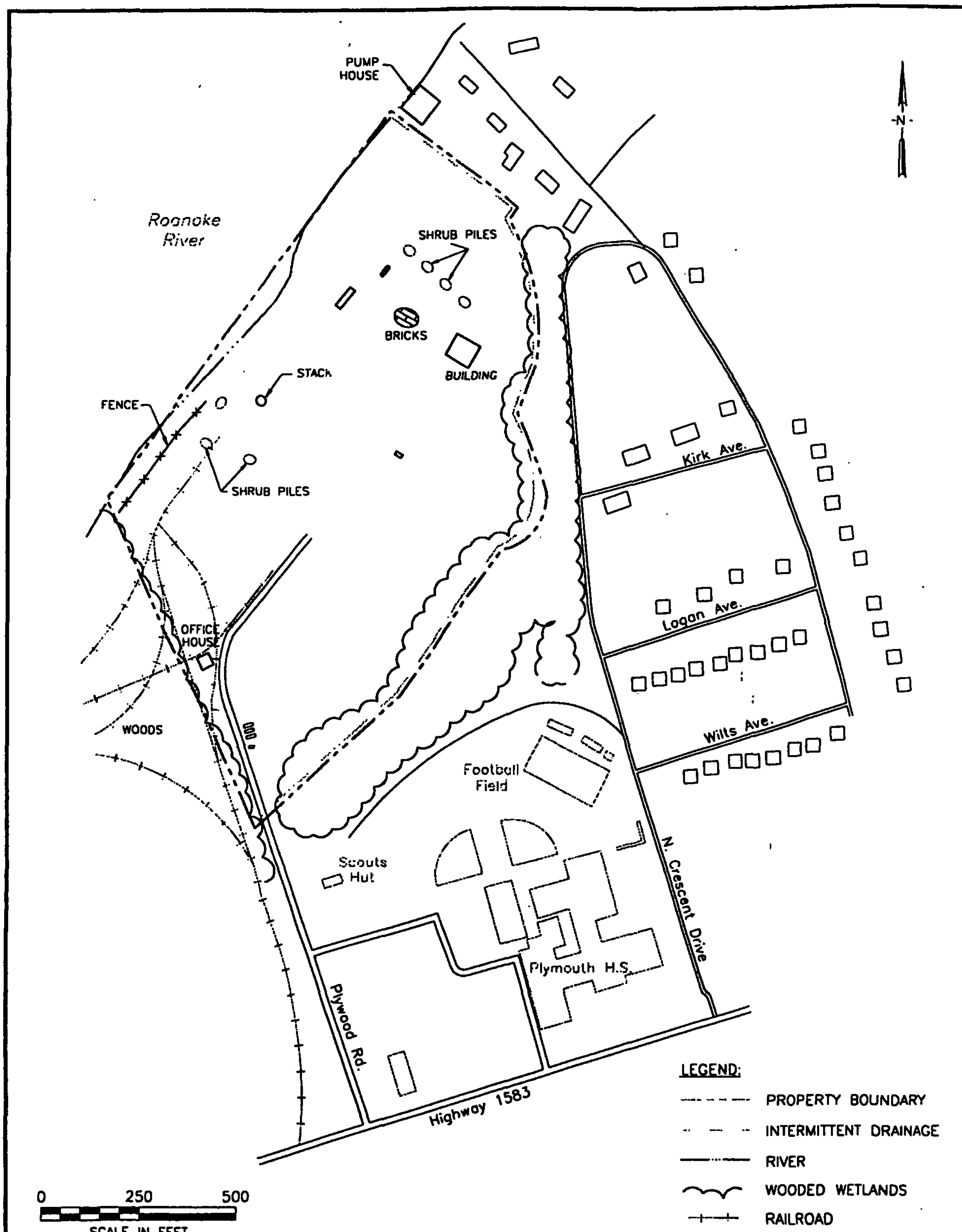
1.2 Site Description

1.2.1 Location

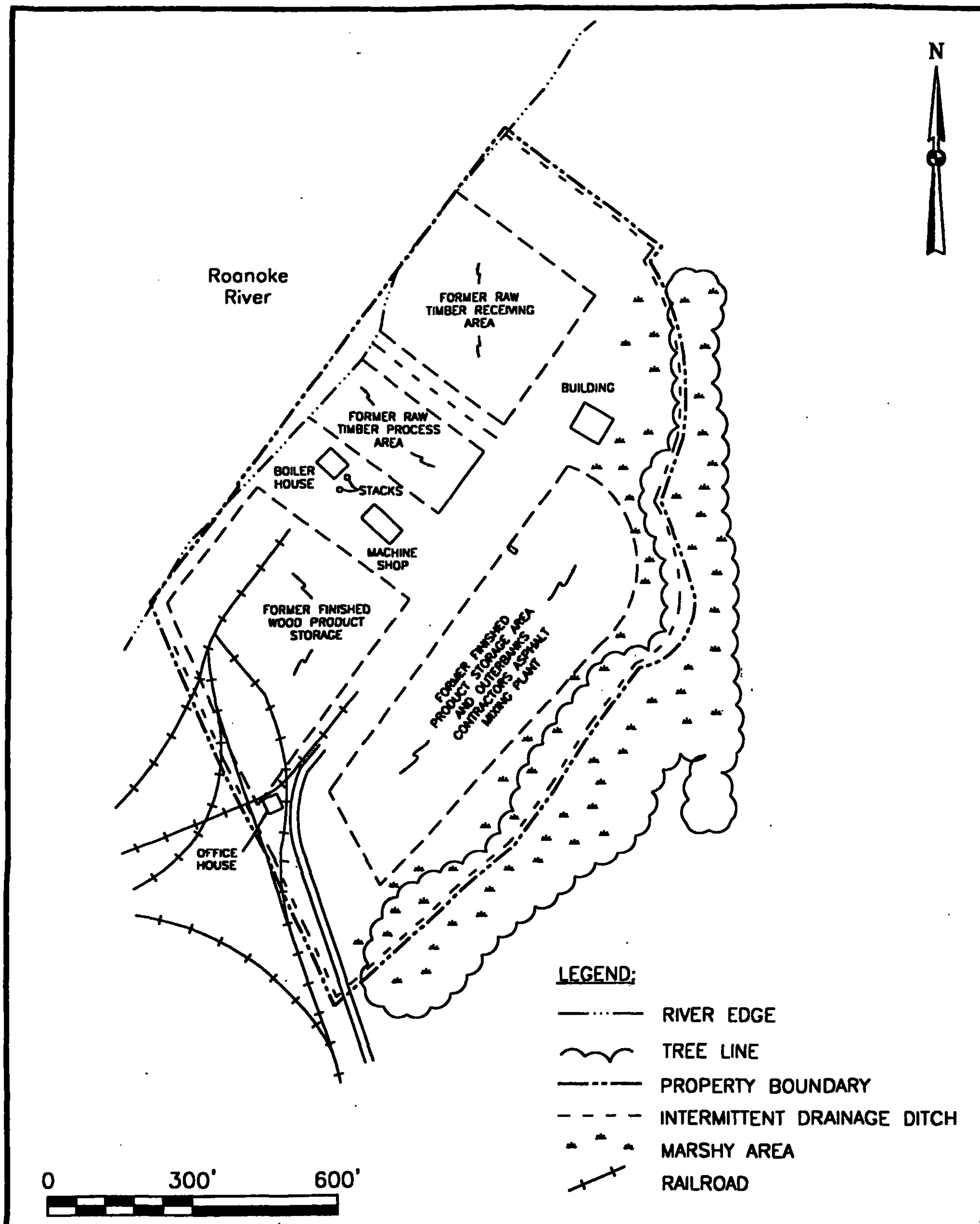
The Georgia-Pacific Site is located on Plywood Drive within the city limits of Plymouth, Washington County, North Carolina, approximately 0.5 miles east of the downtown district. The geographic coordinates of the site are 35°52' 27" North latitude and 76°44' 27.5" West longitude.

1.2.2 Physical Features

The site is approximately 24 acres in size, and is bounded to the north by the Roanoke River, to the west by Atlantic Coast Railroad property, to the east by residential properties, and to the south by the Plymouth High School and the Boy Scouts of America property. A map of the site and surrounding properties is provided in **Figure 1-1**. The site terrain is flat, low-lying with elevation increasing south of the site. Portions of the site are exposed hard packed dirt, gravel, asphalt, or concrete, while other areas are overgrown with grass, trees, and heavy vegetation. The site is presently unoccupied, and some of the former structures used in the past have been demolished. Recently, the removal action activities further demolished and removed other structures and materials from the site and all that remains is one smoke stack. **Figure 1-2** depicts the site layout including all the former structures. As indicated in Figure 1-2, the site has been subdivided into five separate areas to allow for a better description and understanding of former activities at the site. These five areas are described below.



Georgia-Pacific Hardwoods Plymouth, North Carolina CDM	Site and Surrounding Properties	Figure No. 1-1 04/02



Georgia–Pacific Hardwoods Plymouth, North Carolina	Former Site Usage & Features	Figure No. 1–2
CDM consulting · engineering · construction · operations		6/00

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1.2.2.1 Former Finished Wood Products Storage Area/Outerbanks Contractors Asphalt Mixing Plant

This is the area that starts at the entrance to the site and continues to the south of the former railroad spur bed where finished wood products were stored. This area was also subsequently used by Outerbanks Contractors for its asphalt mixing plant operations (see Section 1.4). It is bordered to the south by the perimeter drainage ditch; to the north by the former railroad bed spur; and abuts the property boundaries to the east and west.

Most of the surface cover in this area is vegetated with a variety of grasses. Significant features in this area include a pre-fabricated metal storage shed erected by Outerbanks Contractors and the access gate to the site from Plywood Road (installed recently by EPA). The area in and around the metal storage shed is the location of several containers (drums, cans, canisters, bags, etc.). Prior to a removal action conducted by the PRPs (see Section 1.8), approximately 200 cubic yards of asphalt stockpiled in numerous piles were located in the center of this area. The asphalt stockpile area was roughly rectangular in shape with dimensions of approximately 260 feet by 230 feet (approximately 1.4 acres). During the removal action, the property owner eliminated approximately 50% of the asphalt piles by recycling the asphalt, and moved the remaining asphalt to the front of the storage shed. Prior to the removal action, two 400-gallon aboveground storage tanks (ASTs), one 800-gallon AST, and one 2,500-gallon tanker trailer were also located in this area. During the removal action, the two 400-gallon ASTs were removed from the site. The remaining two tanks were left onsite, by request of the property owner, to be recycled later. A septic tank located in the south-central part of this area was also discovered during the removal action and left in place with a piece of concrete placed over the entrance.

1.2.2.2 Former Finished Wood Products Storage/Employee Parking Area

This is the area extending from the Roanoke River south to the bed of the former railroad spur where finished wood products were stored and employee vehicles were parked. A portion of this area was also used by Outerbanks Contractors for their asphalt mixing operations. It is bordered to the south by the former railroad spur bed; to the north by the Roanoke River; to the west by the property boundary; and to the east by the Raw Timber Process Area.

Most of the surface cover in this area is vegetated with a variety of grasses, shrubs, and saplings. Significant features include the office house located inside the entrance gate from Plywood Road and the pier on the Roanoke River (in the western corner of the site) that was constructed after 1984. Approximately 200 cubic yards of soil stockpiled in two piles are also located at the western margin of this area. The source of the soil is unknown.

1.2.2.3 Former Raw Timber Process Area

The Former Raw Timber Process Area is located in the north-central section of the site, extending from the Roanoke River to the former locations of several finished wood product storage sheds and a dry kiln. This area supported the timber process buildings where raw timber logs were debarked, sawed, planed, and (in some instances) surface treated with a liquid anti-stain formulation (dilute pentachlorophenate to prevent staining from mold and mildew growth) and allowed to dry. It was also used by Outerbanks Contractors for its asphalt mixing plant operations. The area is bordered to the south by the former railroad bed spur; to the north by the Roanoke River; to the east by an intermittent drainage ditch; and to the west by the Former Finished Wood Products Storage/Employee Parking Area.

Most of the surface cover in this area is a mix of remnant buildings, foundations, and concrete pads with a dense cover of grasses, shrubs, and trees. Significant features prior to the removal action included a machine shop building, log deck ramp, boiler house and stack, and concrete foundations and storage pads. During the removal action, the boiler house and machine shop were demolished, and most of the demolition debris was transported offsite. Only the machine shop brick was left onsite in this area, at the request of the property owner.

Prior to the removal action, one 20,000-gallon AST, and one 7,500-gallon tanker trailer were also located in this area. These two tanks were thought to contain petroleum products. During the removal action, the tanker trailer was removed from the site. The remaining 20,000 AST was left onsite, by request of the property owner, to be recycled later.

1.2.2.4 Former Raw Timber Receiving Area

The Former Raw Timber Receiving Area is located in the easternmost portion of the site where raw timber logs were received and stored prior to processing. This area is bordered to the south by the Former Finished Wood Products Storage Area/Outerbanks Contractors Asphalt Mixing Plant; to the north by the Roanoke River; to the west by the Former Raw Timber Process Area; and abuts the property boundary and perimeter intermittent drainage ditch to the east. Most of this area's surface cover is densely vegetated with a variety of shrubs and trees.

1.2.2.5 Intermittent Drainage Ditches

This area is comprised of the following two intermittent drainage ditches:

- <u>Perimeter Intermittent Drainage Ditch</u> - this ditch borders the property boundary from the site access gate on Plywood Road to its confluence with the Roanoke River at the northern corner of the property. This ditch also runs from Plywood Road along the southwest property boundary to the Roanoke River.

- <u>Raw Timber Process Area Intermittent Drainage Ditch</u> - this ditch extends from the former railroad spur bed to its confluence with the Roanoke River, separating the Raw Timber Process Area from the Raw Timber Receiving Area.

1.2.3 Demography

The estimated population within a 4-mile radius of the site is approximately 7,000. The nearest residence is located approximately 700 feet east of the site. The Plymouth High School is located 0.27 miles south of the site. A Boy Scouts of America facility is located adjacent to the Plymouth High School. The land to the north of the site, and immediately north of the Roanoke River, is classified as wetlands.

Access to the site is restricted by a gate; however, there are no fences around the property. A zone of dense woods separates the site from the Plymouth High School, the Boy Scouts of America facility, and residential properties. There has been visual evidence that people trespass onsite and use the docks for recreational fishing in the Roanoke River.

1.2.4 Surrounding Land/Water Use

The principal land use in the immediate vicinity of the site is residential and institutional. The citizens of Plymouth have water supplied from one of three sources: the city of Plymouth Public Works Water System, the Washington County system, or private wells. The city and county water supplies are obtained from 4 municipal wells located within 1-2 miles southwest of the site. It is not known how many private or community wells are currently being used within a four-mile radius of the site.
There are no surface water intakes located within a fifteen-mile surface water pathway downstream from the site.

1.3 Environmental Setting

1.3.1 Physiography/Topography

Washington County, North Carolina lies in the Atlantic Coastal Plain Physiographic Province. This portion of the Atlantic Coastal Plain is primarily characterized by extensive, flat coastal swamps and marshes. Approximately half of the land mass within a four-mile radius of the site is wooded marsh or wetland. The elevation of the site is approximately 5 feet above mean sea level (msl), and is slightly below 5 feet msl in the nearby wetland areas. Elevations increase to 15 feet msl to the south of the site.

1.3.2 Climate/Meteorology

The climatological data for Washington County, North Carolina is representative of the climate in the Plymouth area. Northwestern Washington County has a mean annual precipitation of approximately 50 inches and a mean annual lake evaporation of 41 inches. Therefore, the net annual precipitation is 9 inches. The 2-year, 24-hour rainfall is approximately 4 inches.

1.3.3 Geology

The regional geology of Washington County is characterized by complexly interbedded sediments. The sediments are unconsolidated and consist primarily of sand, silt, and clay transported by streams from the adjacent uplands of the Piedmont and Blue Ridge Provinces. The surficial sediments at the site are approximately 25 feet thick, and are underlain by a confining layer which is 25 feet thick. The primary geologic units in the Plymouth area are the Yorktown and Duplin Formations. The Yorktown is generally characterized by fine-grained sands interspersed with varying amounts of silt, clay, and shell beds, and sandy and silty limestones, while the Duplin

Formation contains fossiliferous sand, sandy limestone, silty limestone, and calcareous silty sand.

The majority of the onsite soil is described as Tarboro sand, while the soil in the adjacent wetlands and the small stream surrounding the property is described as Muckalee loams. Tarboro sand is an excessively drained soil normally found on low broad ridges commonly adjacent to the Roanoke River. The surface layer of this soil is low in organic matter content. Permeability is rapid and the available water capacity is low. The soil is well suited to most urban uses and provides a good support for most structures. The Muckalee loam is a nearly level, poorly drained hydric soil. It is subject to frequent flooding.

1.3.4 Hydrogeology

The surficial aquifer in the area of the site is comprised of approximately 25 feet of surficial deposits, underlain by a 25-foot confining layer. Depth to the water table in the surficial aquifer at the site typically varies from 3.5 to 5 feet below land surface (bls). Although no water level measurements have been collected at the site, typical hydrogeology for such a site dictates that groundwater in the surficial aquifer most likely flows toward and discharges into the Roanoke River during normal baseflow conditions in the Roanoke River.

The surficial aquifer and the 25-foot confining layer are underlain by 40 feet of sand and marl of the Yorktown Formation. The Yorktown Aquifer is a confined aquifer which serves as a major source of water for portions of Washington County. The Yorktown Aquifer is underlain by the confined Pungo Aquifer, which can be reached 90 feet below the land surface. The Yorktown Aquifer is underlain by a 25-foot confining layer. Below this confining layer, the Castle Hayne Aquifer can be reached at a depth of approximately 115 feet bls.

The extent of water withdrawal from the aquifers overlying the Castle Hayne in the vicinity of the site is unknown; no groundwater targets have been identified for aquifers in the area other than the Castle Hayne. The Castle Hayne Aquifer serves as the principal source of groundwater in the Plymouth area, and consists of porous and permeable limestone, sandy limestone, and sand. Hydraulic conductivity values in the Castle Hayne Aquifer range from 15 ft/day to 200 ft/day. The Castle Hayne Aquifer in the Plymouth area occurs from 150 to 180 feet bls.

Recharge to the surficial aquifer is directly from precipitation. Recharge to the underlying groundwater system occurs primarily in the upland interstream areas where the sand layers crop out. Discharge from the system occurs by seepage to streams, estuaries and the ocean. Movement of water from the recharge areas to discharge is controlled primarily by the hydraulic gradients of the dipping beds.

1.3.5 Surface Water Hydrology

The site is located immediately to the south of the Roanoke River. The Roanoke River receives surface water from the site through direct runoff, and from several onsite intermittent drainage ditches. The surface water pathway flows in an northeasterly direction along the Roanoke River for approximately 6 miles, where it flows into the Albemarle Sound. Surface waters in the Albemarle Sound flow eastward towards the Atlantic Ocean for the remainder of the 15-mile surface water pathway.

1.3.6 Wildlife and Natural Resources

The Roanoke River is classified as a "Class C" river with an "Sw" supplemental designation. Class C waters are protected for aquatic life propagation and survival, fishing, wildlife, secondary recreation, and agriculture. A fish consumption advisory has been in effect for a period of years along the lower Roanoke River due to elevated levels of dioxin in fish tissue. There are extensive wetlands around the site; however, there are no known critical habitats of Federally-listed endangered species within the vicinity of the site. There are several endangered and threatened species in Washington County, North Carolina, including the bald eagle as a state and federally-designated endangered species, and the golden eagle and the Waccamaw killifish as state-designated endangered and threatened species.

1.4 Site Operations History

The site was originally owned and operated by the Atlas Plywood Company. There is no information regarding Atlas's operations and waste management practices. Georgia-Pacific reportedly bought the facility in 1950, and operated the facility until 1980 employing approximately 400 workers. Site operations involved debarking, sawing, and planing rough hardwood timber from logs. Surface treatment of some finished lumber took place using a conveyor belt and dip vat. The sawmill facility was permanently closed after a 1983 fire destroyed the sawmill. Georgia-Pacific sold the property to Decatur Partnerships, and the site was leased to Outerbanks Contractors who used a portion of the site as an asphalt mixing plant, employing approximately 10 workers. Allegedly, during the time of the asphalt mixing plant operations, a spill of trichloroethene (TCE) caused by the North Carolina Department of Transportation occurred in the Former Finished Wood Products Storage Area/Outerbanks Contractors Asphalt Mixing Plant area of the site. The amount of the spill was not determined for this report. The entire site is currently unoccupied and inactive.

The wood treating process at the site involved passing wood through a dip vat located on a conveyor system, where the wood was surface coated with preservatives and/or insecticides. After treatment, the wood was reportedly allowed to drip dry directly onto the ground or onto concrete pads before being placed in the lumber storage areas. The dip vat solutions contained pentachlorophenate, sodium metaborate, lindane, and other chlorophenol compounds. Georgia-Pacific's Resource Conservation and Recovery Act (RCRA) Part A Permit Application identified process wastes associated with the facility included spent oil containing metals (D001-ignitable/D007-chromium, D008-lead), spent halogenated degreasing solvents (F001), spent non-halogenated degreasing solvents (F003/F005), and bottom sediment sludge from the treatment of wastewater from the wood treating process (K001). The amount of waste generated on a yearly basis by Georgia-Pacific was estimated to be 20,000 pounds of D001/D007/D008 waste, 375 pounds of F001/F003/F005 wastes, and 16,300 pounds of K001 waste. Wastes were either incinerated onsite or transported to the county landfill.

1.5 Previous Sampling Investigation Results

Prior investigations at the site include the Preliminary Assessment conducted by the North Carolina Division of Health Services on December 6, 1985, the Phase I Screening Site Inspection (SSI) conducted by the NUS Corp. on October 11, 1989, the Phase II SSI conducted by Greenhorne & O'Mara Inc. in September 1991, the Site Inspection Prioritization (SIP) conducted by the Dynamac Corp. on April 15, 1994, and the Expanded Site Inspection (ESI) conducted by the North Carolina Department of Environment, Health, and Natural Resources in June 1995. Sampling was performed only during the Phase II SSI and the Expanded Site Inspection. During the Phase II SSI, 4 surface soil samples, 2 drainage ditch soil samples, and 3 temporary well point groundwater samples were collected. During the Expanded Site Inspection, 5 surface soil samples, 1 drainage ditch soil sample, and 3 surface water/sediment samples from the Roanoke River were collected.

The analytical results from these investigations indicated that onsite soils have been contaminated as a result of past operations. Elevated levels of dioxin/furan isomers, metals, pesticides/PCB's, as well as purgeable and extractable organic compounds were identified in the soils in the dip vat area during both sampling investigations. Elevated levels of many of these compounds were also detected in the sediment samples from the drainage ditches which carry site runoff to the Roanoke River. In addition, the Phase II SSI results indicate that onsite groundwater may have been contaminated with VOCs, pesticides, and metals. However, no groundwater samples were collected during the 1995 ESI to confirm these results.

Surface water runoff from the site has resulted in site-related contamination in the Roanoke River. Sediment samples collected during the 1995 ESI indicated the presence of elevated levels of aluminum, arsenic, iron, lead, pentachlorophenol, (3 and/or 4) methyl phenol, benzo(b/k) fluoranthene, the dioxin/furans congeners 2,3,7,8-tetrachlorodibenzodioxin (TCDD), 1,2,3,7,8-pentachlorodibenzodioxin, 1,2,3,4,7,8-hexachlorodibenzodioxin, octachlorodibenzodioxin, and 2,3,7,8-tetrachlordibenzofuran.

1.6 Nature of Problem

As indicated above, many chemicals have been identified as having contaminated various media at the site. Dioxin and pentachlorophenol are two of the principal contaminants found in the onsite surface soil and river sediments. General physical, chemical, and toxicity characteristics of these contaminants are presented below:

- <u>Dioxin</u> - Chlorinated dibenzo-p-dioxins are a class of compounds referred to as dioxins. One form of dioxin, TCDD, is the most toxic form of dioxin in humans. It is a colorless solid with no known odor. TCDD does not occur in nature. Exposures to high levels of TCDD can cause chloracne, a severe skin lesion that usually occurs on the head and upper body. There is suggestive evidence that TCDD may cause liver damage, and is suspected of causing cancer.

Animal studies also suggest that exposure to high levels of dioxin may cause liver damage in certain species. Exposure can also cause loss of appetite, weight loss, digestive disorders, and death. Dioxin exposure may also result in abnormal reproduction of offspring. Exposure to TCDD has been proven to cause cancer in certain animals.

- Pentachlorophenol - Pure pentachlorophenol exists as colorless crystals with a very sharp odor when hot, but little odor at room temperature. Pentachlorophenol in impure form can appear dark gray to brown dust, beads, or flakes. Pentachlorophenol does not occur naturally. It is widely used as a wood preservative for power poles, fence posts, lumber, etc. Short-term exposures to pentachlorophenol can reportedly cause harmful effects on the human liver, kidneys, skin, blood, lungs, nervous system, and intestinal tract, and can cause death. The inhalation of the sodium salt of pentachlorophenol by animals has proven to be extremely toxic.

Thus, the results of the previous investigations indicate a threat to human health and the environment may exist at the site. However, because the previous investigations did not fully define the nature and extent of the contamination, further site characterization was required to identify and assess the health and environmental concerns related to the exposure routes substantiated through the previous investigations.

1.7 RI Field Investigation Summary

The primary objective of this RI was to provide the additional data needed to adequately support a baseline human health and ecological risk assessment, and to provide a basis on which to recommend a subsequent cost-effective remedial action plan, if necessary. Note that this RI focused on all aspects of the Georgia-Pacific Site south of the Roanoke River. Because, the Roanoke River is a large and complex surface water body that may have been affected by many other sites or sources of contamination upstream of the Georgia-Pacific Site, the sampling and analysis of Roanoke River samples was not included in this RI. Instead, a separate RI is currently being conducted for the Roanoke River which can better address the potential multi-site releases of contamination to this surface water body.

The first step in the remedial investigation, after the project plans were developed, was a field investigation. The field investigation included the following tasks:

- Soil Sampling - A total of 70 surface soil and 67 subsurface soil samples (not including duplicates) were collected from various locations on- and offsite. The number of soil samples collected from the various areas are as follows:

Area	Surface Soil Samples	Subsurface Soil Samples
Sawmill Plant Area	55	67
School and Boy Scout Area	7	0
Residential Areas	8	0

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All of the surface and subsurface soil samples were sent to a CLP laboratory for complete TCL/TAL analyses, except one. One of the surface soil samples was not analyzed for VOCs. In addition, 60 of the surface soil samples and 19 of the subsurface soil samples were analyzed for dioxins/furans by a CLP laboratory.

- Surface Water/Sediment Sampling - A total of 3 surface water and 7 sediment samples (not including duplicates) were collected from the intermittent drainage ditches onsite. All the surface water/sediment samples were sent to a CLP laboratory for complete TCL/TAL analyses. In addition, all the sediment samples were sent to a CLP laboratory for analysis of dioxins/furans.

- Temporary Well Installation and Groundwater Sampling - A total of 5 temporary shallow monitor wells were installed. Groundwater samples were then collected from these 5 temporary monitor wells, as well as 9 existing shallow monitor wells installed previously at the site. All groundwater samples were sent to a CLP laboratory for complete TCL/TAL analyses.

1.8 Removal Action

In August 1999, after the RI field investigation was completed and the analytical results were received from the CLP laboratories, the PRPs conducted a removal action at the site under order by EPA to "abate the imminent and substantial endangerment of the public health, welfare, or the environment that may be presented by the actual or threatened release of hazardous substances at or from the site." All the activities conducted during the removal action are described in detail in the *Removal Action Summary Report* (BBL Environmental Services, 1999, later referred to as BBLES).

As indicated in the above sections, two buildings were demolished and three storage tanks were removed from the site during this removal action. The main activity of the removal action, however, was the removal of soil with concentrations of contaminants (as determined from the RI sampling investigation data and data collected during the removal action) exceeding the following site-specific removal action levels (SSRALs):

- 2,3,7,8-TCDD = 1 ug/kg
- Dioxin expressed as 2,3,7,8-TCDD toxic equivalent quotient = 1 ug/kg
- Pentachlorophenol = 25 mg/kg
- Total PAHs = 100,000 ug/kg
- Total carcinogenic PAHs = 50,000 ug/kg
- Arsenic = 30 mg/kg
- Chromium (total) = 200 mg/kg
- Chromium VI = 90 mg/kg
- Lead = 400 mg/kg

Soils exceeding these criteria were excavated and transported offsite to a secure landfill. The excavated areas were then backfilled and compacted to pre-existing grade with clean soil.

Prior to conducting the soil removal activities, several additional soil samples were collected from specific site areas to better characterize the soil concentrations. In addition, after conducting the soil removal activities and prior to backfilling, several confirmation samples of soils were collected to ensure that all the soil exceeding the removal action levels was removed. The original RI soil sampling data and the subsequent excavated grid confirmation sample data are presented and discussed in Section 2.

1.9 Overview of Report

The remainder of this report contains descriptions and results of the sampling activities performed during the RI and the Removal Action. Brief summaries of the remaining sections are presented below:

- Sections 2, 3, and 4, discuss the results of the soil, surface water/sediment, and groundwater sampling investigations, respectively. Each of these sections describes the purpose of the investigation, outlines the methodology for sampling, and summarizes the results of the investigation.

- Section 5 presents the results of the contaminant fate and transport analysis.

- Section 6 presents the Quality Assurance Report which summarizes and quantifies the RI analytical data and especially the quality control data.

- Section 7 summarizes the results of the remedial investigation and presents the conclusions reached based on these results.

Section 2
Soil Sampling Investigation

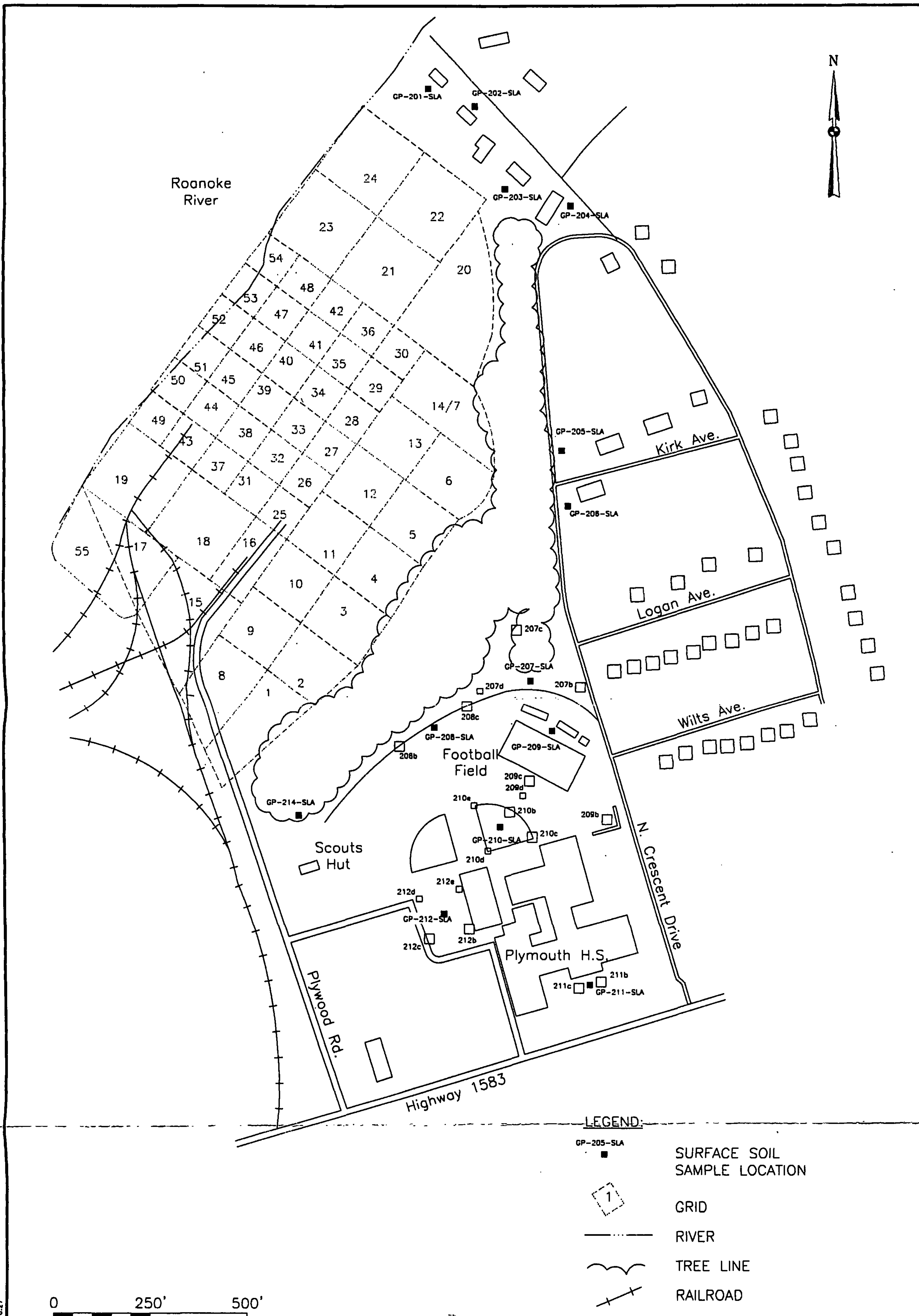
2.1 Purpose and Scope

The amount of pre-remedial investigation data and information accumulated on the GP Site was insufficient to complete a baseline risk assessment to adequately develop a practical and effective remediation plan for the site. In August 1998, the USEPA Region IV SESD prepared a Remedial Investigation (RI) Work Plan to obtain the additional data needed. The Work Plan described the field investigation methods and procedures for collection of onsite and offsite soil for determining the nature of, and the areal and vertical extent of contamination in soils at the site. Upon receipt and review of the analytical results of the RI, EPA determined that a removal action was necessary at the site to address the potential of impact on human health and the environment. Prior to the mobilization of the removal action contractor, EPA established site-specific action levels for nine constituents of concern (COCs) detected in soil and intermittent drainage ditch sediment at the site. These SSRALs are provided in Section 1.8 of this report. The RI analytical data were compared to the SSRALs and grids were identitied where the action levels were exceeded. Once a grid was excavated, soil samples were collected to confirm that the remaining soils were below SSRALs. The RI and removal action confirmation analytical data will be discussed in the subsequent sections.

2.2 Methods

2.2.1 Remedial Investigation Soil Sampling

For the RI field investigation, a grid system was established throughout the GP site property as shown in **Figure 2-1**. Figure 2-1 also shows the general offsite sampling locations at various residential, school, and Boy Scout properties. Fifty-five grids were used for the onsite sampling. For the surface soil sample collection, one composite sample was prepared by collecting five aliquots within each grid. As stated in the Work Plan, one aliquot was collected from the center of each grid. The four other aliquots were located approximately 35 feet, 60 feet or 85 feet from the center of the grid, based on the grid sizes of 100 by 100 feet, 150 by 150 feet and 200 by 200 feet, respectively, at angles 0°, 90°, 180°, and 270° from north. Some deviations to this sampling procedure were necessary due to conditions encountered at the site. In some grids only the grab sample from the center could be collected and in other grids some of the aliquot locations were not collected or were collected at different grid, based on the grid sizes of 100 by 100 feet, 150 by 150 feet and 200 by 200 feet, respectively, at angles 0°, 90°, 180°, and 270° from north. Some deviations to this sampling procedure were necessary due to conditions encountered at the site. In some grids only the grab sample from the center could be collected and in other grids some of the aliquot locations were not collected or were collected at different locations within a grid other than the distance or angles described above. The surface soil samples were collected from 0 to 6 inches below land surface (bls). The samples were analyzed for volatile (VOA) and extractable organic compounds



Georgia-Pacific Hardwoods
Plymouth, North Carolina

CDM

Onsite Grid and
Offsite Soil Sampling Locations

Figure No.
2-1

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(SVOAs), pesticides, polychlorinated biphenyls, metals, dioxins, and dibenzofurans. The VOA soil sample was collected as a grab sample from the center of the grid.

For the subsurface soil, a grab sample was collected from the center of each grid at a depth of 18 to 24 inches bls. In addition, subsurface soil samples were collected from grids 25 through 55 at a depth interval of 35 to 42 inches bls. As above, a few of these subsurface soils could not be collected due to subsurface obstructions preventing use of hand augering.

Surface soils were also collected at fourteen locations on residential properties adjacent to the site. These samples were collected as a composite of five aliquots and were analyzed for the same constituents as onsite soils.

Analysis of RI samples was performed by EPA's contracted laboratories. Data validation of the RI analytical data was performed by Region IV SESD Office of Quality Assurance and Data Integration.

2.2.2 Removal Action Soil Sampling

In general, five point aliquot composite samples were collected and the samples were analyzed for the same constituents as the RI data by a laboratory subcontracted by BBLES, Savannah Laboratories and Environmental Services, Inc. in Savannah Georgia. The RI data were compared to SSRALs and the following grids were planned for excavation at the depths given:

- Grid 39 - 1 foot;
- Grid 40 - 1 foot;
- Grid 41 - 2.5 feet;
- Grid 44 - 2.5 feet;
- Grid 46 - 4 feet;
- Grid 47 - 1 foot; and
- Grid 49 - 2.5 feet

Following the excavation of the grids, one five-point composite sample was collected from the surface of each of the seven excavated grids and these samples were analyzed for the constituents of concern that originally exceeded the SSRAL. The USEPA also collected and analyzed split samples of these confirmation samples collected by BBLES. The BBLES results are presented below following the RI sampling results.

2.3 Summary

The analytical results for surface and subsurface soil samples collected onsite and offsite in the residential neighborhood are summarized in **Tables 2-1 through 2-4. Table 2-1** presents the volatile and extractable organic constituents detected. **Table 2-2** presents the pesticide and PCBs constituents detected. **Table 2-3** presents the dioxins and furans detected. **Table 2-4** presents the inorganic constituents detected. Note that for the purpose of summarizing, only chemicals detected at least once in each medium and their measured concentrations are presented in the summary tables. The complete data set of analytical results for the CLP laboratory analyses performed are provided in Appendix A.

TABLE 2-1

SOIL SAMPLING SUMMARY - VOLATILE AND EXTRACTABLE ORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP001SLA	GP001SLB (Duplicate)	GP002SLA	GP002SLB	GP003SLA	GP003SLB	GP004SLA	GP004SLB
VOLATILE ORGANICS								
1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	11 U	11 U	11 U	9 J	13 U	12 U	10 U	11 U
1,2-DICHLOROETHENE (TOTAL)	11 U	11 U	11 U	6 J	13 U	12 U	10 U	11 U
CARBON DISULFIDE	11 U	11 U	11 U	14 U	13 U	12 U	10 U	11 U
METHYL ETHYL KETONE	11 J	11 J	11 U	14 U	13 U	12 U	10 U	11 U
TETRACHLOROETHENE (TETRACHLOROETHYLENE)	11 UJ	11 UJ	11 U	14 U	13 UJ	12 U	10 U	11 U
TOLUENE	11 UJ	11 UJ	11 U	6 J	13 UJ	12 U	10 U	11 U
TRICHLOROETHENE (TRICHLOROETHYLENE)	11 UJ	11 UJ	11 U	14 U	13 U	12 U	10 U	11 U
EXTRACTABLE ORGANICS								
(3-AND/OR 4-)METHYLPHENOL	350 U	370 U	3600 U	810 U	420 U	400 U	400 U	370 U
2,4-DINITROTOLUENE	350 U	370 U	3600 U	810 U	420 U	400 U	400 U	370 U
2-METHYLNAPHTHALENE	350 U	370 U	3600 U	810 U	420 U	400 U	400 U	370 U
ACENAPHTHENE	350 U	370 U	3600 U	810 U	420 U	400 U	400 U	370 U
ACENAPHTHYLENE	350 U	370 U	3600 U	810 U	420 U	400 U	400 U	370 U
ANTHRACENE	49 J	370 U	3600 U	810 U	420 U	400 U	400 U	370 U
BENZO(A)ANTHRACENE	76 J	38 J	3600 U	810 U	420 U	400 U	400 U	370 U
BENZO(B AND/OR K)FLUORANTHENE	140 J	91 J	3600 U	810 U	420 U	400 U	400 U	370 U
BENZO(GHI)PERYLENE	350 U	370 U	3600 U	810 U	420 U	400 U	400 U	370 U
BENZO-A-PYRENE	350 U	370 U	3600 U	810 U	420 U	400 U	400 U	370 U
CARBAZOLE	350 U	370 U	3600 U	810 U	420 U	400 U	400 U	370 U
CHRYSENE	63 J	370 U	3600 U	84 J	420 U	400 U	400 U	370 U
DIBENZO(A,H)ANTHRACENE	350 U	370 U	3600 U	810 U	420 U	400 U	400 U	370 U
DIBENZOFURAN	350 U	370 U	3600 U	810 U	420 U	400 U	400 U	370 U
FLUORANTHENE	350 U	53 J	3600 U	120 J	420 U	400 U	400 U	370 U
FLUORENE	350 U	370 U	3600 U	810 U	420 U	400 U	400 U	370 U
INDENO (1,2,3-CD) PYRENE	350 U	370 U	3600 U	810 U	420 U	400 U	400 U	370 U
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE	350 U	370 U	3600 U	810 U	420 U	400 U	400 U	370 U
NAPHTHALENE	350 U	370 U	3600 U	810 U	420 U	400 U	400 U	370 U
PENTACHLOROPHENOL	890 U	930 U	9000 U	2000 U	1100 U	1000 U	1000 U	930 U
PHENANTHRENE	350 U	53 J	3600 U	810 U	420 U	400 U	400 U	370 U
PYRENE	350 U	52 J	3600 U	100 J	420 U	400 U	400 U	370 U

Data Qualifiers:

U = Material was analyzed but not detected. The number is the minimum quantitation limit.

NA = Not analyzed.

J = Estimated value

Concentrations presented in ug/kg

TABLE 2-1

SOIL SAMPLING SUMMARY - VOLATILE AND EXTRACTABLE ORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP005SLA	GP005SLB	GP006SLA	GP006SLB	GP007SLA	GP007SLA (Duplicate)	GP007SLB	GP007SLB (Duplicate)
VOLATILE ORGANICS								
1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
1,2-DICHLOROETHENE (TOTAL)	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
CARBON DISULFIDE	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
METHYL ETHYL KETONE	11 U	11 U	11 U	11 U	11 U	11 U	11 U	11 U
TETRACHLOROETHENE (TETRACHLOROETHYLENE)	*4 J*	11 UJ	11 U	11 U	11 U	11 U	11 U	11 U
TOLUENE	11 UJ	11 UJ	11 U	11 U	11 U	11 U	11 U	11 U
TRICHLOROETHENE (TRICHLOROETHYLENE)	*2 J*	11 U	11 U	11 U	11 U	11 U	11 U	11 U
EXTRACTABLE ORGANICS								
(3-AND/OR 4-)METHYLPHENOL	370 U	3500 U	770 U	1900 U	3700 U	1900 U	410 U	380 U
2,4-DINITROTOLUENE	370 U	3500 U	770 U	1900 U	3700 U	1900 U	410 U	380 U
2-METHYLNAPHTHALENE	370 U	3500 U	770 U	*220 J*	3700 U	1900 U	410 U	380 U
ACENAPHTHENE	370 U	3500 U	770 U	1900 U	3700 U	1900 U	410 U	380 U
ACENAPHTHYLENE	370 U	3500 U	770 U	1900 U	3700 U	1900 U	410 U	380 U
ANTHRACENE	370 U	3500 U	770 U	1900 U	3700 U	1900 U	410 U	380 U
BENZO(A)ANTHRACENE	370 U	3500 U	770 U	1900 U	3700 U	1900 U	410 U	380 U
BENZO(B AND/OR K)FLUORANTHENE	370 U	3500 U	770 U	1900 U	3700 U	1900 U	410 U	380 U
BENZO(GHI)PERYLENE	370 U	3500 U	770 U	1900 U	3700 U	1900 U	410 U	380 U
BENZO-A-PYRENE	370 U	3500 U	770 U	1900 U	3700 U	1900 U	410 U	380 U
CARBAZOLE	370 U	3500 U	770 U	1900 U	3700 U	1900 U	410 U	380 U
CHRYSENE	370 U	3500 U	770 U	1900 U	3700 U	1900 U	410 U	380 U
DIBENZO(A,H)ANTHRACENE	370 U	3500 U	770 U	1900 U	3700 U	1900 U	410 U	380 U
DIBENZOFURAN	370 U	3500 U	770 U	1900 U	3700 U	1900 U	410 U	380 U
FLUORANTHENE	370 U	3500 U	770 U	1900 U	3700 U	1900 U	410 U	380 U
FLUORENE	370 U	3500 U	770 U	1900 U	3700 U	1900 U	410 U	380 U
INDENO (1,2,3-CD) PYRENE	370 U	3500 U	770 U	1900 U	3700 U	1900 U	410 U	380 U
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE	370 U	3500 U	770 U	*550 J*	3700 U	1900 U	410 U	380 U
NAPHTHALENE	370 U	3500 U	770 U	1900 U	3700 U	1900 U	410 U	380 U
PENTACHLOROPHENOL	930 U	8700 U	1900 U	4800 U	9400 U	4700 U	1000 U	960 U
PHENANTHRENE	370 U	3500 U	770 U	*410 J*	3700 U	1900 U	410 U	380 U
PYRENE	370 U	3500 U	770 U	1900 U	3700 U	1900 U	410 U	380 U

TABLE 2-1

SOIL SAMPLING SUMMARY - VOLATILE AND EXTRACTABLE ORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP008SLA	GP008SLB	GP009SLA	GP009SLB	GP010SLA	GP010SLB	GP011SLA	GP012SLA
VOLATILE ORGANICS								
1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	11 U	12 U	11 U	59 UJ	11 U	11 U	11 U	11 U
1,2-DICHLOROETHENE (TOTAL)	11 U	12 U	11 U	59 UJ	11 U	11 U	11 U	11 U
CARBON DISULFIDE	11 U	50 U	11 U	*810 J*	11 U	11 U	11 U	11 U
METHYL ETHYL KETONE	11 U	12 U	11 U	59 UJ	11 U	11 U	11 U	11 U
TETRACHLOROETHENE (TETRACHLOROETHYLENE)	11 U	12 U	11 U	59 UJ	11 U	11 U	11 U	11 U
TOLUENE	11 U	12 U	11 U	59 UJ	11 U	11 U	11 U	11 U
TRICHLOROETHENE (TRICHLOROETHYLENE)	11 U	12 U	11 U	59 UJ	11 U	11 U	11 U	11 U
EXTRACTABLE ORGANICS								
(3-AND/OR 4-)METHYLPHENOL	730 U	870 U	360 U	3200 U	350 U	360 U	340 U	1800 U
2,4-DINITROTOLUENE	730 U	870 U	360 U	3200 U	350 U	360 U	340 U	1800 U
2-METHYLNAPHTHALENE	730 U	870 U	360 U	3200 U	350 U	360 U	340 U	1800 U
ACENAPHTHENE	730 U	870 U	360 U	3200 U	350 U	360 U	340 U	1800 U
ACENAPHTHYLENE	730 U	870 U	360 U	3200 U	350 U	360 U	340 U	1800 U
ANTHRACENE	730 U	870 U	360 U	3200 U	350 U	360 U	340 U	1800 U
BENZO(A)ANTHRACENE	730 U	90 J	360 U	3200 U	350 U	360 U	340 U	1800 U
BENZO(B AND/OR K)FLUORANTHENE	*83 J*	*100 J*	360 U	3200 U	350 U	360 U	340 U	1800 U
BENZO(GHI)PERYLENE	730 U	870 U	360 U	3200 U	350 U	360 U	340 U	1800 U
BENZO-A-PYRENE	730 U	870 U	360 U	3200 U	350 U	360 U	340 U	1800 U
CARBAZOLE	730 U	870 U	360 U	3200 U	350 U	360 U	340 U	1800 U
CHRYSENE	730 U	100 J	360 U	3200 U	350 U	360 U	340 U	1800 U
DIBENZO(A,H)ANTHRACENE	730 U	870 U	360 U	3200 U	350 U	360 U	340 U	1800 U
DIBENZOFURAN	730 U	870 U	360 U	3200 U	350 U	360 U	340 U	1800 U
FLUORANTHENE	91 J	170 J	360 U	3200 U	350 U	360 U	340 U	1800 U
FLUORENE	730 U	870 U	360 U	3200 U	350 U	360 U	340 U	1800 U
INDENO (1,2,3-CD) PYRENE	730 U	870 U	360 U	3200 U	350 U	360 U	340 U	1800 U
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE	730 U	870 U	360 U	3200 U	350 U	360 U	340 U	1800 U
NAPHTHALENE	730 U	870 U	360 U	3200 U	350 U	360 U	340 U	1800 U
PENTACHLOROPHENOL	1800 U	2200 U	890 U	8000 U	880 U	900 U	860 U	4500 U
PHENANTHRENE	730 U	160 J	360 U	3200 U	350 U	360 U	340 U	1800 U
PYRENE	*88 J*	*150 J*	360 U	3200 U	350 U	360 U	340 U	1800 U

TABLE 2-1

SOIL SAMPLING SUMMARY - VOLATILE AND EXTRACTABLE ORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP013SLA	GP013SLB	GP015SLA	GP015SLB	GP016SLA	GP016SLB	GP017SLA	GP017SLA (Duplicate)
VOLATILE ORGANICS								
1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	11 U	11 U	11 U	12 U	11 U	11 U	10 U	10 U
1,2-DICHLOROETHENE (TOTAL)	11 U	11 U	11 U	12 U	11 U	11 U	10 U	10 U
CARBON DISULFIDE	50 U	11 U	11 U	12 U	60 U	11 U	10 U	10 U
METHYL ETHYL KETONE	11 U	11 U	11 U	12 U	11 U	11 U	10 U	10 U
TETRACHLOROETHENE (TETRACHLOROETHYLENE)	11 U	11 U	11 U	12 U	11 U	11 U	10 U	10 U
TOLUENE	*7 J*	11 U	11 U	12 U	11 U	11 U	10 U	10 U
TRICHLOROETHENE (TRICHLOROETHYLENE)	11 U	11 U	11 U	12 U	11 U	11 U	10 U	10 U
EXTRACTABLE ORGANICS								
(3-AND/OR 4-)METHYLPHENOL	1800 U	1800 U	1900 U	380 U	350 U	350 U	340 U	340 U
2,4-DINITROTOLUENE	1800 U	1800 U	*780 J*	380 U	350 U	350 U	340 U	340 U
2-METHYLNAPHTHALENE	1800 U	1800 U	1900 U	380 U	350 U	350 U	340 U	340 U
ACENAPHTHENE	1800 U	1800 U	1900 U	380 U	350 U	350 U	340 U	340 U
ACENAPHTHYLENE	1800 U	1800 U	1900 U	380 U	350 U	350 U	340 U	340 U
ANTHRACENE	1800 U	1800 U	*250 J*	380 U	*80 J*	350 U	*96 J*	*64 J*
BENZO(A)ANTHRACENE	1800 U	1800 U	*1800 J*	380 U	*470*	350 U	*410*	*280 J*
BENZO(B AND/OR K)FLUORANTHENE	1800 U	1800 U	*2600 J*	380 U	*870 J*	350 U	*790 J*	*450 J*
BENZO(GHI)PERYLENE	1800 U	1800 U	*440 J*	380 U	*250 J*	350 U	340 U	*240 J*
BENZO-A-PYRENE	1800 U	1800 U	*1600 J*	380 U	*410*	350 U	*260 J*	*300 J*
CARBAZOLE	1800 U	1800 U	1900 U	380 U	*74 J*	350 U	340 U	340 U
CHRYSENE	1800 U	1800 U	*2300*	380 U	*500*	350 U	*330 J*	*260 J*
DIBENZO(A,H)ANTHRACENE	1800 U	1800 U	1900 U	380 U	350 U	350 U	340 U	*75 J*
DIBENZOFURAN	1800 U	1800 U	1900 U	380 U	350 U	350 U	340 U	340 U
FLUORANTHENE	1800 U	1800 U	*3900*	*44 J*	*830*	350 U	*760*	*450*
FLUORENE	1800 U	1800 U	1900 U	380 U	350 U	350 U	340 U	340 U
INDENO (1,2,3-CD) PYRENE	1800 U	1800 U	*540 J*	380 U	*260 J*	350 U	340 U	*230 J*
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE	1800 U	1800 U	1900 U	380 U	350 U	350 U	340 U	340 U
NAPHTHALENE	1800 U	1800 U	1900 U	380 U	350 U	350 U	340 U	340 U
PENTACHLOROPHENOL	4500 U	4500 U	4700 U	960 U	890 U	870 U	860 U	860 U
PHENANTHRENE	1800 U	1800 U	*640 J*	380 U	*510*	350 U	*170 J*	*130 J*
PYRENE	1800 U	1800 U	*7200*	380 U	*680*	350 U	*420*	*380*

TABLE 2-1

SOIL SAMPLING SUMMARY - VOLATILE AND EXTRACTABLE ORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP017SLB	GP017SLB (Duplicate)	GP018SLA	GP018SLA (Duplicate)	GP019SLA	GP019SLB	GP020SLA	GP020SLB
VOLATILE ORGANICS								
1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U
1,2-DICHLOROETHENE (TOTAL)	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U
CARBON DISULFIDE	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U
METHYL ETHYL KETONE	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U
TETRACHLOROETHENE (TETRACHLOROETHYLENE)	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U
TOLUENE	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U
TRICHLOROETHENE (TRICHLOROETHYLENE)	11 U	11 U	11 U	11 U	11 U	11 U	12 U	12 U
EXTRACTABLE ORGANICS								
(3-AND/OR 4-)METHYLPHENOL	370 U	370 U	350 U	350 U	360 U	370 U	730 U	370 U
2,4-DINITROTOLUENE	370 U	370 U	350 U	350 U	360 U	370 U	730 U	370 U
2-METHYLNAPHTHALENE	370 U	370 U	350 U	350 U	360 U	370 U	730 U	370 U
ACENAPHTHENE	370 U	370 U	350 U	350 U	360 U	370 U	730 U	370 U
ACENAPHTHYLENE	370 U	370 U	350 U	350 U	360 U	370 U	730 U	370 U
ANTHRACENE	370 U	370 U	350 U	350 U	***41 J***	370 U	730 U	370 U
BENZO(A)ANTHRACENE	***71 J***	370 U	350 U	350 U	***140 J***	370 U	730 U	370 U
BENZO(B AND/OR K)FLUORANTHENE	***130 J***	370 U	350 U	350 U	***220 J***	370 U	730 U	370 U
BENZO(GHI)PERYLENE	***44 J***	370 U	350 U	350 U	***75 J***	370 U	730 U	370 U
BENZO-A-PYRENE	***56 J***	370 U	350 U	350 U	***100 J***	370 U	730 U	370 U
CARBAZOLE	370 U	370 U	350 U	350 U	360 U	370 U	730 U	370 U
CHRYSENE	***61 J***	370 U	350 U	350 U	***120 J***	370 U	730 U	370 U
DIBENZO(A,H)ANTHRACENE	370 U	370 U	350 U	350 U	360 U	370 U	730 U	370 U
DIBENZOFURAN	370 U	370 U	350 U	350 U	360 U	370 U	730 U	370 U
FLUORANTHENE	***120 J***	***46 J***	350 U	350 U	***280 J***	370 U	730 U	370 U
FLUORENE	370 U	370 U	350 U	350 U	360 U	370 U	730 U	370 U
INDENO (1,2,3-CD) PYRENE	370 U	370 U	350 U	350 U	***68 J***	370 U	730 U	370 U
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE	370 U	370 U	350 U	350 U	360 U	370 U	730 U	370 U
NAPHTHALENE	370 U	370 U	350 U	350 U	360 U	370 U	730 U	370 U
PENTACHLOROPHENOL	920 U	930 U	880 U	880 U	900 U	930 U	1800 U	940 U
PHENANTHRENE	***50 J***	370 U	350 U	350 U	***220 J***	370 U	730 U	370 U
PYRENE	***100 J***	***38 J***	350 U	350 U	***220 J***	370 U	730 U	370 U

TABLE 2-1

SOIL SAMPLING SUMMARY - VOLATILE AND EXTRACTABLE ORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP021SLA	GP021SLB	GP022SLA	GP022SLB	GP023SLA	GP023SLB	GP024SLA	GP024SLB
VOLATILE ORGANICS								
1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	12 U	11 U	12 U	11 U	12 U	13 U	11 UJ	12 U
1,2-DICHLOROETHENE (TOTAL)	12 U	11 U	12 U	11 U	12 U	13 U	11 UJ	12 U
CARBON DISULFIDE	12 U	11 U	12 U	11 U	12 U	13 U	*97 J*	12 U
METHYL ETHYL KETONE	12 U	11 U	12 U	11 U	12 U	13 U	11 UJ	12 U
TETRACHLOROETHENE (TETRACHLOROETHYLENE)	12 U	11 U	12 U	11 U	12 U	13 U	11 UJ	12 U
TOLUENE	12 U	11 U	12 U	11 U	12 U	13 U	11 UJ	12 U
TRICHLOROETHENE (TRICHLOROETHYLENE)	12 U	11 U	12 U	11 U	12 U	13 U	11 UJ	12 U
EXTRACTABLE ORGANICS								
(3-AND/OR 4-)METHYLPHENOL	370 U	340 U	380 U	370 U	400 U	440 U	1400 U	5600 U
2,4-DINITROTOLUENE	370 U	340 U	380 U	370 U	400 U	440 U	1400 U	*2500 J*
2-METHYLNAPHTHALENE	370 U	340 U	380 U	370 U	400 U	440 U	1400 U	5600 U
ACENAPHTHENE	370 U	340 U	380 U	370 U	400 U	440 U	1400 U	5600 U
ACENAPHTHYLENE	370 U	340 U	380 U	370 U	400 U	440 U	1400 U	5600 U
ANTHRACENE	370 U	340 U	380 U	370 U	400 U	440 U	1400 U	5600 U
BENZO(A)ANTHRACENE	370 U	340 U	380 U	370 U	400 U	440 U	1400 U	5600 U
BENZO(B AND/OR K)FLUORANTHENE	370 U	340 U	380 U	370 U	400 U	440 U	1400 U	*1400 J*
BENZO(GHI)PERYLENE	370 U	340 U	380 U	370 U	400 U	440 U	1400 U	5600 U
BENZO-A-PYRENE	370 U	340 U	380 U	370 U	400 U	440 U	1400 U	5600 U
CARBAZOLE	370 U	340 U	380 U	370 U	400 U	440 U	1400 U	5600 U
CHRYSENE	370 U	340 U	380 U	370 U	400 U	440 U	1400 U	5600 U
DIBENZO(A,H)ANTHRACENE	370 U	340 U	380 U	370 U	400 U	440 U	1400 U	5600 U
DIBENZOFURAN	370 U	340 U	380 U	370 U	400 U	440 U	1400 U	5600 U
FLUORANTHENE	370 U	340 U	380 U	370 U	400 U	440 U	1400 U	*600 J*
FLUORENE	370 U	340 U	380 U	370 U	400 U	440 U	1400 U	5600 U
INDENO (1,2,3-CD) PYRENE	370 U	340 U	380 U	370 U	400 U	440 U	1400 U	5600 U
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE	370 U	340 U	380 U	370 U	400 U	440 U	1400 U	5600 U
NAPHTHALENE	370 U	340 U	380 U	370 U	400 U	440 U	1400 U	5600 U
PENTACHLOROPHENOL	920 U	860 U	970 U	930 U	1000 U	1100 U	3400 U	14000 U
PHENANTHRENE	370 U	340 U	380 U	370 U	400 U	440 U	1400 U	5600 U
PYRENE	370 U	340 U	380 U	370 U	400 U	440 U	1400 U	*580 J*

TABLE 2-1

SOIL SAMPLING SUMMARY - VOLATILE AND EXTRACTABLE ORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP025SLA	GP025SLB	GP025SLC	GP026SLA	GP026SLB	GP026SLC	GP027SLA	GP027SLB
VOLATILE ORGANICS								
1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	11 U	11 U	12 U	12 U	11 U	11 U	11 U	11 U
1,2-DICHLOROETHENE (TOTAL)	11 U	11 U	12 U	12 U	11 U	11 U	11 U	11 U
CARBON DISULFIDE	11 U	11 U	12 U	12 U	11 U	11 U	20 U	11 U
METHYL ETHYL KETONE	11 U	11 U	12 U	12 U	11 U	11 U	11 U	11 U
TETRACHLOROETHENE (TETRACHLOROETHYLENE)	11 U	11 U	12 U	12 U	11 U	11 U	11 U	11 U
TOLUENE	11 U	11 U	12 U	12 U	11 U	11 U	11 U	3 J
TRICHLOROETHENE (TRICHLOROETHYLENE)	11 U	11 U	12 U	12 U	11 U	11 U	11 U	11 U
EXTRACTABLE ORGANICS								
(3-AND/OR 4-)METHYLPHENOL	360 U	350 U	400 U	710 U	5100 U	360 U	360 U	350 U
2,4-DINITROTOLUENE	360 U	350 U	400 U	710 U	5100 U	360 U	360 U	350 U
2-METHYLNAPHTHALENE	360 U	350 U	400 U	710 U	4900 J	360 U	360 U	350 U
ACENAPHTHENE	360 U	350 U	400 U	710 U	5100 U	360 U	360 U	350 U
ACENAPHTHYLENE	360 U	350 U	400 U	710 U	5100 U	360 U	360 U	350 U
ANTHRACENE	360 U	350 U	400 U	710 U	5100 U	360 U	360 U	350 U
BENZO(A)ANTHRACENE	90 J	56 J	400 U	180 J	5100 U	360 U	360 U	43 J
BENZO(B AND/OR K)FLUORANTHENE	320 J	120 J	400 U	250 J	5100 U	360 U	41 J	190 J
BENZO(GHI)PERYLENE	49 J	350 U	400 U	82 J	5100 U	360 U	360 U	42 J
BENZO-A-PYRENE	140 J	59 J	400 U	130 J	5100 U	360 U	360 U	78 J
CARBAZOLE	360 U	350 U	400 U	710 U	5100 U	360 U	360 U	350 U
CHRYSENE	130 J	64 J	400 U	210 J	590 J	360 U	360 U	73 J
DIBENZO(A,H)ANTHRACENE	360 U	350 U	400 U	710 U	5100 U	360 U	360 U	350 U
DIBENZOFURAN	360 U	350 U	400 U	710 U	1100 J	360 U	360 U	350 U
FLUORANTHENE	75 J	100 J	400 U	310 J	5100 U	360 U	40 J	150 J
FLUORENE	360 U	350 U	400 U	710 U	5100 U	360 U	360 U	350 U
INDENO (1,2,3-CD) PYRENE	80 J	45 J	400 U	84 J	5100 U	360 U	360 U	65 J
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE	360 U	350 U	400 U	710 U	5100 U	360 U	360 U	350 U
NAPHTHALENE	360 U	350 U	400 U	710 U	3000 J	360 U	360 U	350 U
PENTACHLOROPHENOL	900 U	870 U	990 U	1800 U	13000 U	900 U	890 U	870 U
PHENANTHRENE	48 J	44 J	400 U	300 J	2500 J	360 U	360 U	58 J
PYRENE	120 J	97 J	400 U	350 J	580 J	360 U	46 J	130 J

TABLE 2-1

SOIL SAMPLING SUMMARY - VOLATILE AND EXTRACTABLE ORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP027SLC	GP028SLA	GP028SLB	GP028SLC	GP029SLA	GP029SLB	GP029SLC	GP030SLA
VOLATILE ORGANICS								
1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	11 U	11 U	12 U	11 U	10 U	12 U	11 U	11 U
1,2-DICHLOROETHENE (TOTAL)	11 U	11 U	12 U	11 U	10 U	12 U	11 U	11 U
CARBON DISULFIDE	11 U	70 U	50 U	11 U	10 U	12 U	11 U	20 U
METHYL ETHYL KETONE	11 U	11 U	12 U	11 U	10 U	12 U	11 U	11 U
TETRACHLOROETHENE (TETRACHLOROETHYLENE)	11 U	11 UJ	12 UJ	11 U	10 U	12 U	11 U	11 U
TOLUENE	11 U	*6 J*	*3 J*	11 U	*1 J*	12 U	11 U	*2 J*
TRICHLOROETHENE (TRICHLOROETHYLENE)	11 U	11 UJ	12 U	11 U	10 U	12 U	11 U	11 U
EXTRACTABLE ORGANICS								
(3-AND/OR 4-)METHYLPHENOL	350 U	3500 U	380 U	350 U	340 U	380 U	370 U	1800 U
2,4-DINITROTOLUENE	350 U	3500 U	380 U	350 U	6700 U	380 U	370 U	1800 U
2-METHYLNAPHTHALENE	350 U	3500 U	380 U	350 U	6700 U	380 U	370 U	1800 U
ACENAPHTHENE	350 U	3500 U	380 U	350 U	6700 U	380 U	370 U	1800 U
ACENAPHTHYLENE	350 U	3500 U	380 U	350 U	6700 U	380 U	370 U	1800 U
ANTHRACENE	350 U	3500 U	380 U	350 U	6700 U	380 U	370 U	1800 U
BENZO(A)ANTHRACENE	350 U	3500 U	380 U	350 U	340 U	380 U	370 U	1800 U
BENZO(B AND/OR K)FLUORANTHENE	350 U	3500 U	380 U	350 U	6700 U	380 U	370 U	1800 U
BENZO(GHI)PERYLENE	350 U	3500 U	380 U	350 U	6700 U	380 U	370 U	1800 U
BENZO-A-PYRENE	350 U	3500 U	380 U	350 U	6700 U	380 U	370 U	1800 U
CARBAZOLE	350 U	3500 U	380 U	350 U	6700 U	380 U	370 U	1800 U
CHRYSENE	350 U	3500 U	380 U	350 U	340 U	380 U	370 U	1800 U
DIBENZO(A,H)ANTHRACENE	350 U	3500 U	380 U	350 U	6700 U	380 U	370 U	1800 U
DIBENZOFURAN	350 U	3500 U	380 U	350 U	6700 U	380 U	370 U	1800 U
FLUORANTHENE	350 U	3500 U	380 U	350 U	6700 U	380 U	370 U	1800 U
FLUORENE	350 U	3500 U	380 U	350 U	6700 U	380 U	370 U	1800 U
INDENO (1,2,3-CD) PYRENE	350 U	3500 U	380 U	350 U	6700 U	380 U	370 U	1800 U
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE	350 U	3500 U	380 U	350 U	6700 U	380 U	370 U	1800 U
NAPHTHALENE	350 U	3500 U	380 U	350 U	340 U	380 U	370 U	1800 U
PENTACHLOROPHENOL	870 U	8900 U	960 U	890 U	17000 U	970 U	920 U	4400 U
PHENANTHRENE	350 U	3500 U	380 U	350 U	6700 U	380 U	370 U	1800 U
PYRENE	350 U	3500 U	380 U	350 U	*180 J*	380 U	370 U	1800 U

TABLE 2-1

SOIL SAMPLING SUMMARY - VOLATILE AND EXTRACTABLE ORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP030SLB	GP030SLC	GP031SLA	GP031SLB	GP032SLA	GP033SLA	GP034SLA	GP034SLB
VOLATILE ORGANICS								
1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	11 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U
1,2-DICHLOROETHENE (TOTAL)	11 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U
CARBON DISULFIDE	11 U	70 U	11 U	11 U	40 U	11 U	10 U	11 U
METHYL ETHYL KETONE	11 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U
TETRACHLOROETHENE (TETRACHLOROETHYLENE)	11 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U
TOLUENE	2 J	2 J	11 U	11 U	12 U	11 U	10 U	11 U
TRICHLOROETHENE (TRICHLOROETHYLENE)	11 U	11 U	11 U	11 U	12 U	11 U	10 U	11 U
EXTRACTABLE ORGANICS								
(3-AND/OR 4-)METHYLPHENOL	1800 U	740 U	360 U	370 U	3800 U	430 U	360 U	750 U
2,4-DINITROTOLUENE	1800 U	740 U	360 U	370 U	3800 U	430 U	360 U	750 U
2-METHYLNAPHTHALENE	1800 U	130 J	360 U	370 U	3800 U	430 U	360 U	750 U
ACENAPHTHENE	1800 U	90 J	360 U	370 U	3800 U	430 U	360 U	750 U
ACENAPHTHYLENE	1800 U	740 U	360 U	370 U	3800 U	430 U	360 U	750 U
ANTHRACENE	1800 U	220 J	360 U	370 U	3800 U	430 U	360 U	750 U
BENZO(A)ANTHRACENE	1800 U	580 J	360 U	370 U	3800 U	430 U	360 U	170 J
BENZO(B AND/OR K)FLUORANTHENE	1800 U	850 J	360 U	370 U	3800 U	430 U	360 U	510 J
BENZO(GHI)PERYLENE	1800 U	310 J	360 U	370 U	3800 U	430 U	360 U	150 J
BENZO-A-PYRENE	1800 U	440 J	360 U	370 U	3800 U	430 U	360 U	230 J
CARBAZOLE	1800 U	110 J	360 U	370 U	3800 U	430 U	360 U	750 U
CHRYSENE	1800 U	600 J	360 U	370 U	3800 U	430 U	360 U	260 J
DIBENZO(A,H)ANTHRACENE	1800 U	740 U	360 U	370 U	3800 U	430 U	360 U	750 U
DIBENZOFURAN	1800 U	89 J	360 U	370 U	3800 U	430 U	360 U	750 U
FLUORANTHENE	1800 U	1200	360 U	370 U	3800 U	430 U	360 U	260 J
FLUORENE	1800 U	100 J	360 U	370 U	3800 U	430 U	360 U	750 U
INDENO (1,2,3-CD) PYRENE	1800 U	300 J	360 U	370 U	3800 U	430 U	360 U	130 J
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE	1800 U	740 U	360 U	370 U	3800 U	430 U	360 U	750 U
NAPHTHALENE	1800 U	91 J	360 U	370 U	3800 U	430 U	360 U	750 U
PENTACHLOROPHENOL	4600 U	1900 U	910 U	930 U	9600 U	1100 U	910 U	1900 U
PHENANTHRENE	1800 U	1000	360 U	370 U	3800 U	430 U	360 U	120 J
PYRENE	1800 U	1100	360 U	370 U	3800 U	430 U	360 U	290 J

TABLE 2-1

SOIL SAMPLING SUMMARY - VOLATILE AND EXTRACTABLE ORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP034SLC	GP035SLA	GP035SLB	GP035SLC	GP036SLA	GP036SLB	GP036SLC	GP037SLA
VOLATILE ORGANICS								
1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	11 U	11 UJ	12 U	11 U	11 U	11 U	11 U	120 U
1,2-DICHLOROETHENE (TOTAL)	11 U	11 UJ	12 U	11 U	11 U	11 U	11 U	120 U
CARBON DISULFIDE	11 U	11 UJ	*90*	*120*	11 U	20 U	11 U	120 U
METHYL ETHYL KETONE	11 U	11 UJ	12 U	11 U	11 U	11 U	11 U	120 U
TETRACHLOROETHENE (TETRACHLOROETHYLENE)	11 U	11 UJ	12 U	11 UJ	11 U	11 U	11 U	120 U
TOLUENE	11 U	11 UJ	12 U	11 UJ	11 U	11 U	11 U	120 U
TRICHLOROETHENE (TRICHLOROETHYLENE)	11 U	11 UJ	12 U	11 U	11 U	11 U	11 U	120 U
EXTRACTABLE ORGANICS								
(3-AND/OR 4-)METHYLPHENOL	400 U	2000 U	380 U	370 U	1700 U	3600 U	350 U	1800 U
2,4-DINITROTOLUENE	400 U	2000 U	380 U	370 U	1700 U	3600 U	350 U	1800 U
2-METHYLNAPHTHALENE	400 U	2000 U	*69 J*	*180 J*	1700 U	*560 J*	350 U	1800 U
ACENAPHTHENE	400 U	2000 U	380 U	370 U	1700 U	3600 U	350 U	1800 U
ACENAPHTHYLENE	400 U	2000 U	380 U	370 U	1700 U	3600 U	350 U	1800 U
ANTHRACENE	400 U	2000 U	380 U	370 U	1700 U	3600 U	350 U	1800 U
BENZO(A)ANTHRACENE	400 U	2000 U	*41 J*	*110 J*	1700 U	3600 U	350 U	1800 U
BENZO(B AND/OR K)FLUORANTHENE	400 U	2000 U	*86 J*	*190 J*	1700 U	3600 U	350 U	1800 U
BENZO(GHI)PERYLENE	400 U	2000 U	380 U	*67 J*	1700 U	3600 U	350 U	1800 U
BENZO-A-PYRENE	*81 J*	2000 U	380 U	*92 J*	1700 U	3600 U	350 U	1800 U
CARBAZOLE	400 U	2000 U	380 U	370 U	1700 U	3600 U	350 U	1800 U
CHRYSENE	400 U	2000 U	*61 J*	*150 J*	1700 U	3600 U	350 U	1800 U
DIBENZO(A,H)ANTHRACENE	400 U	2000 U	380 U	370 U	1700 U	3600 U	350 U	1800 U
DIBENZOFURAN	400 U	2000 U	380 U	*59 J*	1700 U	3600 U	350 U	1800 U
FLUORANTHENE	400 U	2000 U	*68 J*	*180 J*	1700 U	3600 U	350 U	1800 U
FLUORENE	400 U	2000 U	380 U	370 U	1700 U	3600 U	350 U	1800 U
INDENO (1,2,3-CD) PYRENE	400 U	2000 U	380 U	*58 J*	1700 U	3600 U	350 U	1800 U
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE	400 U	2000 U	380 U	370 U	1700 U	3600 U	350 U	1800 U
NAPHTHALENE	400 U	2000 U	*46 J*	*98 J*	1700 U	3600 U	350 U	1800 U
PENTACHLOROPHENOL	1000 U	5000 U	960 U	940 U	4300 U	9100 U	870 U	4600 U
PHENANTHRENE	400 U	2000 U	*68 J*	*200 J*	1700 U	*840 J*	*41 J*	1800 U
PYRENE	400 U	2000 U	*70 J*	*180 J*	1700 U	3600 U	*36 J*	1800 U

TABLE 2-1

SOIL SAMPLING SUMMARY - VOLATILE AND EXTRACTABLE ORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP037SLB	GP037SLC	GP038SLA	GP038SLA (Duplicate)	GP038SLB	GP038SLC	GP039SLA	GP040SLA
VOLATILE ORGANICS								
1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	11 U	11 U	11 U	11 U	NA	11 U	14 U	11 U
1,2-DICHLOROETHENE (TOTAL)	11 U	11 U	11 U	11 U	NA	11 U	14 U	11 U
CARBON DISULFIDE	11 U	11 U	11 U	20 U	NA	11 U	14 U	11 U
METHYL ETHYL KETONE	11 U	11 U	11 U	11 U	NA	11 U	14 U	11 U
TETRACHLOROETHENE (TETRACHLOROETHYLENE)	11 U	11 U	11 U	11 U	NA	11 U	14 U	11 U
TOLUENE	11 U	11 U	11 U	11 U	NA	11 U	14 U	11 U
TRICHLOROETHENE (TRICHLOROETHYLENE)	11 U	11 U	11 U	11 U	NA	11 U	14 U	11 U
EXTRACTABLE ORGANICS								
(3-AND/OR 4-)METHYLPHENOL	780 U	360 U	370 U	370 U	350 U	360 U	2200 U	370 U
2,4-DINITROTOLUENE	780 U	360 U	370 U	370 U	350 U	360 U	2200 U	370 U
2-METHYLNAPHTHALENE	780 U	360 U	370 U	370 U	350 U	360 U	2200 U	370 U
ACENAPHTHENE	780 U	360 U	370 U	370 U	350 U	360 U	2200 U	370 U
ACENAPHTHYLENE	780 U	360 U	370 U	370 U	350 U	360 U	2200 U	370 U
ANTHRACENE	780 U	360 U	*100 J*	370 U	350 U	*41 J*	2200 U	370 U
BENZO(A)ANTHRACENE	*600 J*	360 U	*170 J*	*190 J*	350 U	*490*	2200 U	370 U
BENZO(B AND/OR K)FLUORANTHENE	*1200 J*	360 U	*270 J*	*320 J*	350 U	*830*	2200 U	370 U
BENZO(GHI)PERYLENE	*430 J*	360 U	*43 J*	*140 J*	350 U	*370*	2200 U	370 U
BENZO-A-PYRENE	*540 J*	360 U	*140 J*	*190 J*	350 U	*560*	2200 U	370 U
CARBAZOLE	780 U	360 U	370 U	370 U	350 U	360 U	2200 U	370 U
CHRYSENE	*710 J*	360 U	*180 J*	*230 J*	350 U	*540*	2200 U	370 U
DIBENZO(A,H)ANTHRACENE	780 U	360 U	370 U	370 U	350 U	360 U	2200 U	370 U
DIBENZOFURAN	780 U	360 U	370 U	370 U	350 U	360 U	2200 U	370 U
FLUORANTHENE	*870*	360 U	*330 J*	*300 J*	350 U	*730*	2200 U	370 U
FLUORENE	780 U	360 U	*41 J*	370 U	350 U	360 U	2200 U	370 U
INDENO (1,2,3-CD) PYRENE	*440 J*	360 U	370 U	*130 J*	350 U	*330 J*	2200 U	370 U
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE	780 U	360 U	370 U	370 U	350 U	360 U	2200 U	370 U
NAPHTHALENE	780 U	360 U	370 U	370 U	350 U	360 U	2200 U	370 U
PENTACHLOROPHENOL	2000 U	910 U	930 U	930 U	890 U	910 U	5600 U	*12000*
PHENANTHRENE	*230 J*	360 U	*350 J*	*190 J*	350 U	*160 J*	2200 U	370 U
PYRENE	*850*	360 U	*270 J*	*350 J*	350 U	*1000*	2200 U	370 U

TABLE 2-1

SOIL SAMPLING SUMMARY - VOLATILE AND EXTRACTABLE ORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP040SLB	GP041SLA	GP041SLB	GP041SLC	GP042SLA	GP042SLB	GP042SLC	GP043SLA
VOLATILE ORGANICS								
1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	11 U	11 U	11 U	11 U	15 UJ	12 U	11 U	11 U
1,2-DICHLOROETHENE (TOTAL)	11 U	11 U	11 U	11 U	15 UJ	12 U	11 U	11 U
CARBON DISULFIDE	11 U	11 U	*100*	11 U	15 UJ	12 U	11 U	11 U
METHYL ETHYL KETONE	11 U	11 U	11 U	11 U	15 UJ	12 U	11 U	11 U
TETRACHLOROETHENE (TETRACHLOROETHYLENE)	11 U	11 U	11 U	11 U	15 UJ	12 U	11 U	11 U
TOLUENE	11 U	11 U	11 U	11 U	15 UJ	12 U	11 U	11 U
TRICHLOROETHENE (TRICHLOROETHYLENE)	11 U	11 U	11 U	11 U	15 UJ	12 U	11 U	11 U
EXTRACTABLE ORGANICS								
(3-AND/OR 4-)METHYLPHENOL	350 U	720 U	710 U	350 U	840 U	1800 U	360 U	370 U
2,4-DINITROTOLUENE	350 U	720 U	710 U	350 U	840 U	1800 U	360 U	370 U
2-METHYLNAPHTHALENE	350 U	720 U	710 U	350 U	840 U	1800 U	360 U	370 U
ACENAPHTHENE	350 U	720 U	710 U	350 U	840 U	1800 U	360 U	370 U
ACENAPHTHYLENE	350 U	720 U	710 U	350 U	840 U	1800 U	360 U	370 U
ANTHRACENE	350 U	720 U	710 U	350 U	840 U	1800 U	360 U	370 U
BENZO(A)ANTHRACENE	350 U	720 U	710 U	350 U	840 U	*270 J*	360 U	370 U
BENZO(B AND/OR K)FLUORANTHENE	*54 J*	720 U	710 U	350 U	840 U	*620 J*	360 U	370 U
BENZO(GHI)PERYLENE	350 U	720 U	710 U	350 U	840 U	*250 J*	360 U	370 U
BENZO-A-PYRENE	350 U	720 U	710 U	350 U	840 U	*270 J*	360 U	370 U
CARBAZOLE	350 U	720 U	710 U	350 U	840 U	1800 U	360 U	370 U
CHRYSENE	350 U	720 U	710 U	350 U	840 U	*290 J*	360 U	370 U
DIBENZO(A,H)ANTHRACENE	350 U	720 U	710 U	350 U	840 U	1800 U	360 U	370 U
DIBENZOFURAN	350 U	720 U	710 U	350 U	840 U	1800 U	360 U	370 U
FLUORANTHENE	*67 J*	720 U	710 U	350 U	840 U	*480 J*	360 U	370 U
FLUORENE	350 U	720 U	710 U	350 U	840 U	1800 U	360 U	370 U
INDENO (1,2,3-CD) PYRENE	350 U	720 U	710 U	350 U	840 U	*210 J*	360 U	370 U
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE	350 U	720 U	710 U	350 U	840 U	1800 U	360 U	370 U
NAPHTHALENE	350 U	720 U	710 U	350 U	840 U	1800 U	360 U	370 U
PENTACHLOROPHENOL	880 U	*1100 J*	1800 U	890 U	2100 U	4500 U	900 U	920 U
PHENANTHRENE	*63 J*	720 U	710 U	350 U	840 U	*380 J*	360 U	370 U
PYRENE	*50 J*	720 U	710 U	350 U	840 U	*440 J*	360 U	370 U

TABLE 2-1

SOIL SAMPLING SUMMARY - VOLATILE AND EXTRACTABLE ORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP044SLA	GP044SLB	GP045SLA	GP045SLB	GP045SLC	GP046SLA	GP046SLB	GP046SLC
VOLATILE ORGANICS								
1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	17 U	12 U	14 U	11 U	11 U	11 U	12 U	11 U
1,2-DICHLOROETHENE (TOTAL)	17 U	12 U	14 U	11 U	11 U	11 U	12 U	11 U
CARBON DISULFIDE	30 U	30 U	14 U	11 U	11 U	11 U	12 U	11 U
METHYL ETHYL KETONE	17 U	12 U	14 U	11 U	11 U	11 U	12 U	11 U
TETRACHLOROETHENE (TETRACHLOROETHYLENE)	17 U	12 U	14 UJ	11 U	11 U	11 U	12 U	11 U
TOLUENE	17 U	12 U	14 UJ	11 U	11 U	11 U	12 U	11 U
TRICHLOROETHENE (TRICHLOROETHYLENE)	17 U	12 U	14 U	11 U	11 U	11 U	12 U	11 U
EXTRACTABLE ORGANICS								
(3-AND/OR 4-)METHYLPHENOL	390 U	8600 U	390 U	360 U	360 U	350 U	*74 J*	370 U
2,4-DINITROTOLUENE	390 U	8600 U	390 U	360 U	360 U	350 U	400 U	370 U
2-METHYLNAPHTHALENE	390 U	8600 U	*43 J*	360 U	360 U	350 U	*110 J*	370 U
ACENAPHTHENE	390 U	*1300 J*	390 U	360 U	360 U	350 U	*310 J*	370 U
ACENAPHTHYLENE	390 U	8600 U	390 U	360 U	360 U	350 U	*2000*	370 U
ANTHRACENE	390 U	*3200 J*	*43 J*	360 U	360 U	350 U	*2800*	370 U
BENZO(A)ANTHRACENE	*44 J*	*10000*	*180 J*	360 U	360 U	350 U	*6500 J*	370 U
BENZO(B AND/OR K)FLUORANTHENE	*48 J*	*14000 J*	*520 J*	*47 J*	360 U	350 U	400 U	*55 J*
BENZO(GHI)PERYLENE	390 U	*4900 J*	*140 J*	360 U	360 U	350 U	400 U	370 U
BENZO-A-PYRENE	390 U	*8000 J*	*180 J*	360 U	360 U	350 U	400 U	370 U
CARBAZOLE	390 U	*2200 J*	390 U	360 U	360 U	350 U	*1800*	370 U
CHRYSENE	*56 J*	*10000*	*260 J*	*37 J*	360 U	350 U	*7300 J*	370 U
DIBENZO(A,H)ANTHRACENE	390 U	8600 U	390 U	360 U	360 U	350 U	400 U	370 U
DIBENZOFURAN	390 U	*1200 J*	390 U	360 U	360 U	350 U	*560*	370 U
FLUORANTHENE	*72 J*	*17000*	*410*	*41 J*	360 U	350 U	*16000*	*71 J*
FLUORENE	390 U	*1700 J*	390 U	360 U	360 U	350 U	*1100*	370 U
INDENO (1,2,3-CD) PYRENE	390 U	*4900 J*	*120 J*	360 U	360 U	350 U	*5800*	370 U
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE	390 U	8600 U	390 U	360 U	360 U	350 U	400 U	370 U
NAPHTHALENE	390 U	*1200 J*	*54 J*	360 U	360 U	350 U	*160 J*	370 U
PENTACHLOROPHENOL	980 U	22000 U	990 U	900 U	890 U	890 U	1000 U	940 U
PHENANTHRENE	390 U	*15000*	*310 J*	360 U	360 U	350 U	*13000*	370 U
PYRENE	*70 J*	*18000*	*350 J*	*46 J*	360 U	350 U	1400 U	*63 J*

TABLE 2-1

SOIL SAMPLING SUMMARY - VOLATILE AND EXTRACTABLE ORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP047SLA	GP047SLB	GP048SLA	GP048SLB	GP048SLC	GP049SLA	GP049SLB	GP049SLC
VOLATILE ORGANICS								
1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	13 U	11 U	14 U	12 U	11 U	11 U	16 U	12 U
1,2-DICHLOROETHENE (TOTAL)	13 U	11 U	14 U	12 U	11 U	11 U	16 U	12 U
CARBON DISULFIDE	*120*	11 U	14 U	50 U	11 U	11 U	16 U	70 U
METHYL ETHYL KETONE	13 U	11 U	14 U	12 U	11 U	11 U	16 U	12 U
TETRACHLOROETHENE (TETRACHLOROETHYLENE)	13 UJ	11 U	14 U	12 U	11 U	11 U	16 U	12 U
TOLUENE	13 UJ	11 U	14 U	12 U	11 U	11 U	16 U	*2 J*
TRICHLOROETHENE (TRICHLOROETHYLENE)	13 U	11 U	14 U	12 U	11 U	11 U	16 U	12 U
EXTRACTABLE ORGANICS								
(3-AND/OR 4-)METHYLPHENOL	400 U	370 U	3900 U	370 U	380 U	350 U	810 U	830 U
2,4-DINITROTOLUENE	400 U	370 U	*1700 J*	370 U	380 U	350 U	810 U	830 U
2-METHYLNAPHTHALENE	400 U	370 U	3900 U	370 U	380 U	350 U	810 U	*180 J*
ACENAPHTHENE	400 U	370 U	3900 U	370 U	380 U	350 U	810 U	*180 J*
ACENAPHTHYLENE	400 U	370 U	3900 U	370 U	380 U	350 U	810 U	830 U
ANTHRACENE	400 U	370 U	3900 U	370 U	380 U	350 U	810 U	*640 J*
BENZO(A)ANTHRACENE	400 U	370 U	3900 U	370 U	380 U	*40 J*	*190 J*	*1500*
BENZO(B AND/OR K)FLUORANTHENE	400 U	370 U	3900 U	370 U	380 U	*110 J*	*310 J*	*2200*
BENZO(GHI)PERYLENE	400 U	370 U	3900 U	370 U	380 U	350 U	*160 J*	*970*
BENZO-A-PYRENE	400 U	370 U	3900 U	370 U	380 U	*55 J*	*170 J*	*1300*
CARBAZOLE	400 U	370 U	3900 U	370 U	380 U	350 U	810 U	*150 J*
CHRYSENE	400 U	370 U	3900 U	370 U	380 U	*43 J*	*220 J*	*1600*
DIBENZO(A,H)ANTHRACENE	400 U	370 U	3900 U	370 U	380 U	350 U	810 U	830 U
DIBENZOFURAN	400 U	370 U	3900 U	370 U	380 U	350 U	810 U	*190 J*
FLUORANTHENE	*47 J*	370 U	*490 J*	370 U	380 U	*42 J*	*340 J*	*2500*
FLUORENE	400 U	370 U	3900 U	370 U	380 U	350 U	810 U	*260 J*
INDENO (1,2,3-CD) PYRENE	400 U	370 U	3900 U	370 U	380 U	350 U	*140 J*	*900*
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE	400 U	370 U	3900 U	370 U	380 U	350 U	810 U	830 U
NAPHTHALENE	400 U	370 U	3900 U	370 U	380 U	350 U	810 U	*200 J*
PENTACHLOROPHENOL	1000 U	940 U	9900 U	930 U	950 U	880 U	2000 U	2100 U
PHENANTHRENE	*43 J*	370 U	*560 J*	*45 J*	380 U	350 U	*210 J*	*2400*
PYRENE	*52 J*	370 U	3900 U	370 U	380 U	*53 J*	*380 J*	*3000*

TABLE 2-1

SOIL SAMPLING SUMMARY - VOLATILE AND EXTRACTABLE ORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP050SLA	GP050SLB	GP051SLA	GP051SLB	GP051SLC	GP052SLA	GP052SLB	GP053SLA
VOLATILE ORGANICS								
1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	11 U	14 U	14 U	11 UJ	12 U	12 U	17 UJ	13 UJ
1,2-DICHLOROETHENE (TOTAL)	11 U	14 U	14 U	11 UJ	12 U	12 U	17 UJ	13 UJ
CARBON DISULFIDE	11 U	14 U	14 U	11 UJ	30 U	12 U	17 UJ	13 UJ
METHYL ETHYL KETONE	11 U	14 U	14 U	11 UJ	12 U	12 U	17 UJ	13 UJ
TETRACHLOROETHENE (TETRACHLOROETHYLENE)	11 U	14 U	14 UJ	11 UJ	12 U	12 U	17 U	13 UJ
TOLUENE	11 U	14 U	14 UJ	*2 J*	*3 J*	12 U	*5 J*	13 UJ
TRICHLOROETHENE (TRICHLOROETHYLENE)	11 U	14 U	14 U	11 UJ	12 U	12 U	17 U	13 UJ
EXTRACTABLE ORGANICS								
(3-AND/OR 4-)METHYLPHENOL	350 U	480 U	420 U	770 U	450 U	390 U	390 U	2300 U
2,4-DINITROTOLUENE	350 U	480 U	420 U	770 U	450 U	390 U	11000 U	2300 U
2-METHYLNAPHTHALENE	350 U	480 U	*91 J*	180 J	450 U	390 U	*130 J*	2300 U
ACENAPHTHENE	350 U	480 U	420 U	770 U	450 U	390 U	11000 U	2300 U
ACENAPHTHYLENE	350 U	480 U	420 U	770 U	450 U	390 U	11000 U	2300 U
ANTHRACENE	350 U	480 U	420 U	770 U	450 U	390 U	11000 U	2300 U
BENZO(A)ANTHRACENE	350 U	480 U	*82 J*	*210 J*	*110 J*	390 U	11000 U	2300 U
BENZO(B AND/OR K)FLUORANTHENE	350 U	480 U	*500 J*	*420 J*	*260 J*	390 U	11000 U	2300 U
BENZO(GHI)PERYLENE	350 U	480 U	*420 U*	*110 J*	*200 J*	390 U	11000 U	2300 U
BENZO-A-PYRENE	350 U	480 U	*69 J*	*210 J*	*140 J*	390 U	11000 U	2300 U
CARBAZOLE	350 U	480 U	420 U	770 U	450 U	390 U	11000 U	2300 U
CHRYSENE	350 U	480 U	*150 J*	*440 J*	*170 J*	390 U	11000 U	2300 U
DIBENZO(A,H)ANTHRACENE	350 U	480 U	420 U	770 U	450 U	390 U	11000 U	2300 U
DIBENZOFURAN	350 U	480 U	420 U	770 U	450 U	390 U	11000 U	2300 U
FLUORANTHENE	350 U	480 U	*190 J*	*270 J*	*300 J*	390 U	11000 U	2300 U
FLUORENE	350 U	480 U	420 U	770 U	450 U	390 U	11000 U	2300 U
INDENO (1,2,3-CD) PYRENE	350 U	480 U	420 U	*140 J*	*130 J*	390 U	11000 U	2300 U
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE	350 U	480 U	420 U	770 U	450 U	390 U	11000 U	2300 U
NAPHTHALENE	350 U	480 U	*62 J*	*90 J*	450 U	390 U	390 U	2300 U
PENTACHLOROPHENOL	870 U	1200 U	1000 U	1900 U	1100 U	990 U	29000 U	5800 U
PHENANTHRENE	350 U	480 U	*140 J*	*450 J*	*120 J*	390 U	11000 U	2300 U
PYRENE	350 U	480 U	*170 J*	*330 J*	*480*	390 U	11000 U	2300 U

TABLE 2-1

SOIL SAMPLING SUMMARY - VOLATILE AND EXTRACTABLE ORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP053SLB	GP053SLC	GP054SLA	GP054SLB	GP054SLC	GP055SLA	GP055SLB	GP056SLA
VOLATILE ORGANICS								
1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	14 U	11 U	11 U	12 U	11 U	12 U	11 U	NA
1,2-DICHLOROETHENE (TOTAL)	14 U	11 U	11 U	12 U	11 U	12 U	11 U	NA
CARBON DISULFIDE	14 U	11 U	11 U	12 U	11 U	70 U	11 U	NA
METHYL ETHYL KETONE	14 U	11 U	11 U	12 U	11 U	12 U	11 U	NA
TETRACHLOROETHENE (TETRACHLOROETHYLENE)	14 U	11 U	11 U	12 U	11 U	12 UJ	11 U	NA
TOLUENE	14 U	11 U	11 U	12 U	11 U	12 UJ	11 U	NA
TRICHLOROETHENE (TRICHLOROETHYLENE)	14 U	11 U	11 U	12 U	11 U	12 U	11 U	NA
EXTRACTABLE ORGANICS								
(3-AND/OR 4-)METHYLPHENOL	9500 U	370 U	350 U	390 U	370 U	400 U	350 U	340 U
2,4-DINITROTOLUENE	9500 U	370 U	350 U	390 U	370 U	400 U	350 U	340 U
2-METHYLNAPHTHALENE	9500 U	370 U	350 U	390 U	370 U	*62 J*	350 U	340 U
ACENAPHTHENE	9500 U	370 U	350 U	390 U	370 U	400 U	350 U	340 U
ACENAPHTHYLENE	9500 U	370 U	350 U	390 U	370 U	400 U	350 U	340 U
ANTHRACENE	9500 U	370 U	350 U	390 U	370 U	400 U	350 U	340 U
BENZO(A)ANTHRACENE	9500 U	370 U	350 U	390 U	370 U	*140 J*	350 U	340 U
BENZO(B AND/OR K)FLUORANTHENE	9500 U	370 U	350 U	390 U	370 U	*480 J*	350 U	340 U
BENZO(GHI)PERYLENE	9500 U	370 U	350 U	390 U	370 U	*160 J*	350 U	340 U
BENZO-A-PYRENE	9500 U	370 U	350 U	390 U	370 U	*220 J*	350 U	340 U
CARBAZOLE	9500 U	370 U	350 U	390 U	370 U	400 U	350 U	340 U
CHRYSENE	9500 U	370 U	350 U	390 U	370 U	*210 J*	350 U	340 U
DIBENZO(A,H)ANTHRACENE	9500 U	370 U	350 U	390 U	370 U	400 U	350 U	340 U
DIBENZOFURAN	9500 U	370 U	350 U	390 U	370 U	400 U	350 U	340 U
FLUORANTHENE	9500 U	370 U	350 U	390 U	370 U	*190 J*	350 U	340 U
FLUORENE	9500 U	370 U	350 U	390 U	370 U	400 U	350 U	340 U
INDENO (1,2,3-CD) PYRENE	9500 U	370 U	350 U	390 U	370 U	*150 J*	350 U	340 U
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE	9500 U	370 U	350 U	390 U	370 U	400 U	350 U	340 U
NAPHTHALENE	9500 U	370 U	350 U	390 U	370 U	400 U	350 U	340 U
PENTACHLOROPHENOL	24000 U	940 U	890 U	980 U	930 U	1000 U	870 U	860 U
PHENANTHRENE	9500 U	370 U	350 U	390 U	370 U	*84 J*	350 U	340 U
PYRENE	9500 U	370 U	350 U	390 U	370 U	*270 J*	350 U	340 U

TABLE 2-1

SOIL SAMPLING SUMMARY - VOLATILE AND EXTRACTABLE ORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP201SLA	GP201SLA (Duplicate)	GP202SLA	GP202SLA (Resample)	GP203SLA	GP204SLA	GP205SLA	GP206SLA
VOLATILE ORGANICS								
1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	10 U	11 U	11 UJ	11 U	12 U	10 U	11 UJ	11 UJ
1,2-DICHLOROETHENE (TOTAL)	10 U	11 U	11 UJ	11 U	12 U	10 U	11 UJ	11 UJ
CARBON DISULFIDE	26	11 U	11 UJ	11 U	13	30	11 UJ	11 UJ
METHYL ETHYL KETONE	10 U	11 U	11 UJ	11 UJ	12 U	10 U	11 UJ	11 UJ
TETRACHLOROETHENE (TETRACHLOROETHYLENE)	10 U	11 U	11 UJ	11 U	12 U	10 U	11 UJ	11 UJ
TOLUENE	10 U	2 J	3 J	11 U	12 U	10 U	11 UJ	11 UJ
TRICHLOROETHENE (TRICHLOROETHYLENE)	10 U	11 U	11 UJ	11 U	12 U	10 U	11 UJ	11 UJ
EXTRACTABLE ORGANICS								
(3-AND/OR 4-)METHYLPHENOL	1800 U	1800 U	350 U	370 U	1800 U	350 U	370 U	390 U
2,4-DINITROTOLUENE	1800 U	1800 U	350 U	370 U	1800 U	350 U	370 U	390 U
2-METHYLNAPHTHALENE	1800 U	1800 U	350 U	370 U	1800 U	350 U	370 U	140 J
ACENAPHTHENE	1800 U	1800 U	350 U	84 J	1800 U	350 U	370 U	390 U
ACENAPHTHYLENE	1800 U	1800 U	350 U	130 J	1800 U	350 U	370 U	390 U
ANTHRACENE	1800 U	1800 U	350 U	450	1800 U	350 U	370 U	390 U
BENZO(A)ANTHRACENE	370 J	430 J	110 J	2300	490 J	350 U	370 U	390 U
BENZO(B AND/OR K)FLUORANTHENE	780 J	1000 J	260 J	4100	850 J	37 J	370 U	390 U
BENZO(GHI)PERYLENE	320 J	360 J	90 J	570	360 J	350 U	370 U	390 U
BENZO-A-PYRENE	370 J	430 J	120 J	1900	480 J	350 UJ	370 UJ	390 UJ
CARBAZOLE	1800 U	1800 U	350 U	260 J	1800 U	350 U	370 U	390 U
CHRYSENE	460 J	450 J	140 J	2400	510 J	44 J	370 U	41 J
DIBENZO(A,H)ANTHRACENE	1800 U	1800 U	350 U	400	1800 U	350 U	370 U	390 U
DIBENZOFURAN	1800 U	1800 U	350 U	110 J	1800 U	350 U	370 U	40 J
FLUORANTHENE	1000 J	1000 J	290 J	5900	960 J	86 J	370 U	72 J
FLUORENE	1800 U	1800 U	350 U	160 J	1800 U	350 U	370 U	390 U
INDENO (1,2,3-CD) PYRENE	300 J	360 J	93 J	1100	360 J	350 U	370 U	390 U
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE	1800 U	1800 U	350 U	370 U	1800 U	350 U	370 U	390 U
NAPHTHALENE	1800 U	1800 U	350 U	70 J	1800 U	350 U	370 U	84 J
PENTACHLOROPHENOL	4500 U	4500 U	870 U	930 U	4600 U	890 U	930 U	970 U
PHENANTHRENE	580 J	630 J	140 J	3500	350 J	57 J	370 U	90 J
PYRENE	830 J	850 J	240 J	4700	810 J	110 J	370 U	51 J

TABLE 2-1

SOIL SAMPLING SUMMARY - VOLATILE AND EXTRACTABLE ORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP207SLA	GP208SLA	GP209SLA	GP210SLA	GP211SLA	GP212SLA	GP213SLA	GP214SLA
VOLATILE ORGANICS								
1,1-DICHLOROETHENE (1,1-DICHLOROETHYLENE)	10 U	11 U	11 U	10 UJ	11 U	11 U	10 U	11 U
1,2-DICHLOROETHENE (TOTAL)	10 U	11 U	11 U	10 UJ	11 U	11 U	10 U	11 U
CARBON DISULFIDE	95	11 U	2 J	10 UJ	11 U	20	10 U	11 U
METHYL ETHYL KETONE	10 U	11 U	11 U	10 UJ	11 U	11 U	10 U	11 U
TETRACHLOROETHENE (TETRACHLOROETHYLENE)	10 U	11 U	11 U	10 UJ	11 U	11 U	10 U	11 UJ
TOLUENE	7 J	11 U	11 U	10 UJ	11 U	11 U	2 J	11 UJ
TRICHLOROETHENE (TRICHLOROETHYLENE)	10 U	11 U	11 U	10 UJ	11 U	11 U	10 U	11 U
EXTRACTABLE ORGANICS								
(3-AND/OR 4-)METHYLPHENOL	1700 U	350 U	350 U	340 U	390 U	1700 U	340 U	340 U
2,4-DINITROTOLUENE	1700 U	350 U	350 U	340 U	390 U	1700 U	340 U	340 U
2-METHYLNAPHTHALENE	1700 U	350 U	350 U	340 U	390 U	1700 U	340 U	340 U
ACENAPHTHENE	1700 U	350 U	350 U	340 U	390 U	1700 U	340 U	340 U
ACENAPHTHYLENE	1700 U	350 U	350 U	340 U	390 U	1700 U	340 U	77 J
ANTHRACENE	1700 U	350 U	350 U	340 U	390 U	1700 U	340 U	150 J
BENZO(A)ANTHRACENE	1700 U	350 U	95 J	340 U	94 J	500 J	340 U	1800
BENZO(B AND/OR K)FLUORANTHENE	1700 U	350 U	160 J	340 U	210 J	1200 J	340 U	4700
BENZO(GHI)PERYLENE	1700 U	350 U	50 J	340 U	63 J	480 J	340 U	760
BENZO-A-PYRENE	1700 UJ	350 UJ	78 J	340 UJ	100 J	580 J	340 UJ	1100 J
CARBAZOLE	1700 U	350 U	350 U	340 U	390 U	1700 U	340 U	330 J
CHRYSENE	1700 U	350 U	120 J	340 U	130 J	620 J	340 U	3900
DIBENZO(A,H)ANTHRACENE	1700 U	350 U	350 U	340 U	390 U	1700 U	340 U	340 U
DIBENZOFURAN	1700 U	350 U	350 U	340 U	390 U	1700 U	340 U	340 U
FLUORANTHENE	1700 U	350 U	230 J	340 U	200 J	1300 J	340 U	9100
FLUORENE	1700 U	350 U	350 U	340 U	390 U	1700 U	340 U	34 J
INDENO (1,2,3-CD) PYRENE	1700 U	350 U	56 J	340 U	68 J	470 J	340 U	790
N-NITROSODIPHENYLAMINE/DIPHENYLAMINE	1700 U	350 U	350 U	340 U	390 U	1700 U	340 U	340 U
NAPHTHALENE	1700 U	350 U	350 U	340 U	390 U	1700 U	340 U	340 U
PENTACHLOROPHENOL	4300 U	870 U	870 U	860 U	990 U	4300 U	840 U	850 U
PHENANTHRENE	1700 U	350 U	140 J	340 U	73 J	460 J	340 U	1500
PYRENE	1700 U	350 U	190 J	340 U	180 J	980 J	340 U	1300

TABLE 2-2

SOIL SAMPLING SUMMARY - PESTICIDES AND PCBs
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP001SLA	GP001SLB (Duplicate)	GP002SLA	GP002SLB	GP003SLA	GP003SLB	GP004SLA	GP004SLB
<u>**PESTICIDES/PCBS**</u>								
4,4'-DDD (P,P'-DDD)	3.5 U	3.7 U	3.6 UR	4 UR	21 U	4 U	4 UR	3.7 UR
4,4'-DDE (P,P'-DDE)	3.5 U	***1.5 J***	3.6 UR	4 UR	21 U	4 U	4 UR	3.7 UR
4,4'-DDT (P,P'-DDT)	3.5 U	3.7 U	3.6 U	4 U	21 U	4 U	4 U	3.7 U
ALDRIN	1.8 U	1.9 U	1.8 U	2.1 U	11 U	2.1 U	2.1 U	1.9 U
ALPHA-BHC	1.8 U	1.9 U	1.8 UJ	2.1 UJ	11 U	2.1 U	2.1 UJ	1.9 UJ
BETA-BHC	1.8 U	1.9 U	1.8 U	2.1 U	11 U	2.1 U	2.1 U	1.9 U
DELTA-BHC	1.8 U	1.9 U	1.8 U	2.1 U	11 U	2.1 U	2.1 U	1.9 U
DIELDRIN	3.5 U	3.7 U	3.6 U	4 U	21 U	4 U	4 U	3.7 U
ENDOSULFAN I (ALPHA)	1.8 U	1.9 U	1.8 UR	2.1 UR	11 U	2.1 U	2.1 UR	1.9 UR
ENDOSULFAN II (BETA)	3.5 U	3.7 U	3.6 UR	4 UR	6.7 U	4 U	4 UR	3.7 UR
ENDRIN	3.5 U	3.7 U	3.6 U	4 U	21 U	4 U	4 U	3.7 U
ENDRIN ALDHYDE	***1 J***	3.7 U	3.6 U	4 U	21 U	4 U	4 U	3.7 U
ENDRIN KEYTONE	3.5 U	3.7 U	3.6 UJ	4 UJ	21 U	4 U	4 UJ	3.7 UJ
GAMMA-BHC (LINDANE)	1.8 U	1.9 U	1.8 U	2.1 U	11 U	2.1 U	2.1 U	1.9 U
GAMMA-CHLORDANE /2	1.8 U	1.9 U	1.8 U	2.1 U	11 U	2.1 U	2.1 U	1.9 U
HEPTACHLOR	1.8 U	1.9 U	1.8 U	2.1 U	11 U	2.1 U	2.1 U	1.9 U
HEPTACHLOR EPOXIDE	1.8 U	1.9 U	1.8 U	2.1 U	11 U	2.1 U	2.1 U	1.9 U
METHOXYCHLOR	18 U	19 U	18 U	21 U	110 U	21 U	21 U	19 U
PCB-1254 (AROCHLOR 1254)	35 U	37 U	36 U	40 U	***670***	***32 J***	40 U	37 U
PCB-1260 (AROCHLOR 1260)	35 U	37 u	36 U	40 U	210 U	40 U	40 U	37 U

<u>**Data Qualifiers:**</u>
U = Material was analyzed but not detected. The number is the minimum quantitation limit
R = QC indicates that data is unusable.
J = Estimated value. N = Presumptive evidence of presence of material
Concentrations reported in ug/kg.

TABLE 2-2

SOIL SAMPLING SUMMARY - PESTICIDES AND PCBs
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP005SLA	GP005SLB	GP006SLA	GP006SLB	GP007SLA	GP007SLA (Duplicate)	GP007SLB	GP007SLB (Duplicate)
PESTICIDES/PCBS								
4,4'-DDD (P,P'-DDD)	3.7 U	3.4 UR	3.8 UR	3.8 UR	3.7 UR	3.7 UR	4.1 UR	3.8 UR
4,4'-DDE (P,P'-DDE)	3.7 U	3.4 UR	3.8 UR	*2.1 J*	3.7 UR	3.7 UR	4.1 UR	3.8 UR
4,4'-DDT (P,P'-DDT)	3.7 U	3.4 U	3.8 U	3.8 U	3.7 U	3.7 U	4.1 U	3.8 U
ALDRIN	1.9 U	1.8 U	2 U	2 U	1.9 U	1.9 U	2.1 U	2 U
ALPHA-BHC	1.9 U	1.8 UJ	2 UJ	2 UJ	1.9 UJ	1.9 UJ	2.1 UJ	2 UJ
BETA-BHC	1.9 U	1.8 U	2 U	2 U	1.9 U	1.9 U	2.1 U	2 U
DELTA-BHC	1.9 U	1.8 U	2 U	2 U	1.9 U	1.9 U	2.1 U	2 U
DIELDRIN	3.7 U	3.4 U	3.8 U	3.8 U	3.7 U	3.7 U	4.1 U	3.8 U
ENDOSULFAN I (ALPHA)	1.9 U	1.8 UR	2 UR	2 UR	1.9 UR	1.9 UR	2.1 UR	2 UR
ENDOSULFAN II (BETA)	3.7 U	3.4 UR	3.8 UR	3.8 UR	3.7 UR	3.7 UR	4.1 UR	3.8 UR
ENDRIN	3.7 U	3.4 U	3.8 U	3.8 U	3.7 U	3.7 U	4.1 U	3.8 U
ENDRIN ALDHYDE	3.7 U	3.4 UJ	3.8 U	3.8 U	3.7 U	3.7 U	4.1 U	3.8 U
ENDRIN KEYTONE	3.7 U	18 U	3.8 UJ	3.8 UJ	3.7 UJ	3.7 UJ	4.1 UJ	3.8 UJ
GAMMA-BHC (LINDANE)	1.9 U	1.8 U	2 U	2 U	1.9 U	1.9 U	2.1 U	2 U
GAMMA-CHLORDANE /2	1.9 U	1.8 U	2 U	2 U	1.9 U	1.9 U	2.1 U	2 U
HEPTACHLOR	1.9 U	1.8 U	2 U	2 U	1.9 U	1.9 U	2.1 U	2 U
HEPTACHLOR EPOXIDE	1.9 U	1.8 U	2 U	2 U	1.9 U	1.9 U	2.1 U	2 U
METHOXYCHLOR	19 U	3.4 U	20 U	20 U	19 U	19 U	21 U	20 U
PCB-1254 (AROCHLOR 1254)	37 U	34 U	38 U	38 U	37 U	37 U	41 U	38 U
PCB-1260 (AROCHLOR 1260)	37 U	34 U	38 U	38 U	37 U	37 U	41 U	38 U

TABLE 2-2

SOIL SAMPLING SUMMARY - PESTICIDES AND PCBs
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP008SLA	GP008SLB	GP009SLA	GP009SLB	GP010SLA	GP010SLB	GP011SLA	GP012SLA
PESTICIDES/PCBS								
4,4'-DDD (P,P'-DDD)	3.6 UR	4.4 UR	3.6 UR	6.3 UR	3.5 U	3.6 U	3.4 UR	3.5 UR
4,4'-DDE (P,P'-DDE)	3.6 UR	4.4 UR	3.6 UR	6.3 UR	***0.67 J***	3.6 U	3.4 UR	3.5 UR
4,4'-DDT (P,P'-DDT)	3.6 U	4.4 U	3.6 U	6.3 U	3.5 U	***0.9 J***	3.4 U	3.5 U
ALDRIN	1.9 U	2.3 U	1.8 U	3.2 U	1.8 U	1.8 U	1.8 U	1.8 U
ALPHA-BHC	1.9 UJ	2.3 UJ	1.8 UJ	3.2 UJ	1.8 U	1.8 U	1.8 UJ	1.8 UJ
BETA-BHC	1.9 U	2.3 U	1.8 U	3.2 U	1.8 U	1.8 U	1.8 U	1.8 U
DELTA-BHC	1.9 U	2.3 U	1.8 U	3.2 U	1.8 U	1.8 U	1.8 U	1.8 U
DIELDRIN	3.6 U	4.4 U	3.6 U	6.3 U	3.5 U	3.6 U	3.4 U	3.5 U
ENDOSULFAN I (ALPHA)	1.9 UR	2.3 UR	1.8 UR	3.2 UR	1.8 U	1.8 U	1.8 UR	1.8 UR
ENDOSULFAN II (BETA)	3.6 UR	4.4 UR	3.6 UR	6.3 UR	3.5 U	3.6 U	3.4 UR	3.5 UR
ENDRIN	3.6 U	4.4 U	3.6 U	6.3 U	3.5 U	3.6 U	3.4 U	3.5 U
ENDRIN ALDHYDE	3.6 U	4.4 U	3.6 U	6.3 U	3.5 U	3.6 U	3.4 U	3.5 U
ENDRIN KEYTONE	3.6 UJ	4.4 UJ	3.6 UJ	6.3 UJ	3.5 U	3.6 U	3.4 UJ	3.5 UJ
GAMMA-BHC (LINDANE)	1.9 U	2.3 U	1.8 U	3.2 U	1.8 U	1.8 U	1.8 U	1.8 U
GAMMA-CHLORDANE /2	1.9 U	2.3 U	1.8 U	3.2 U	1.8 U	1.8 U	1.8 U	1.8 U
HEPTACHLOR	1.9 U	2.3 U	1.8 U	3.2 U	1.8 U	1.8 U	1.8 U	1.8 U
HEPTACHLOR EPOXIDE	1.9 U	2.3 U	1.8 U	3.2 U	1.8 U	1.8 U	1.8 U	1.8 U
METHOXYCHLOR	19 U	23 U	18 U	32 U	18 U	18 U	18 U	18 U
PCB-1254 (AROCHLOR 1254)	36 U	44 U	36 U	63 U	35 U	36 U	34 U	35 U
PCB-1260 (AROCHLOR 1260)	36 U	44 U	36 U	63 U	35 U	36 U	34 U	35 U

TABLE 2-2

SOIL SAMPLING SUMMARY - PESTICIDES AND PCBs
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP013SLA	GP013SLB	GP015SLA	GP015SLB	GP016SLA	GP016SLB	GP017SLA	GP017SLA (Duplicate)
PESTICIDES/PCBS								
4,4'-DDD (P,P'-DDD)	3.6 UR	3.6 UR	3.7 UR	3.8 UR	3.6 J	3.5 UR	3.4 U	3.4 U
4,4'-DDE (P,P'-DDE)	3.6 UR	3.6 UR	3.7 UR	3.8 UR	3.6 UR	3.5 UR	3.4 U	3.4 U
4,4'-DDT (P,P'-DDT)	3.6 U	3.6 U	3.7 U	3.8 U	3.6 U	3.5 U	3.4 U	3.4 U
ALDRIN	1.9 U	1.8 U	1.9 U	2 U	1.8 U	1.8 U	1.8 U	1.8 U
ALPHA-BHC	1.9 UJ	1.8 UJ	1.9 UJ	2 UJ	1.8 UJ	1.8 UJ	1.8 U	1.8 U
BETA-BHC	1.9 U	1.8 U	1.9 U	2 U	1.8 U	1.8 U	1.8 U	1.8 U
DELTA-BHC	1.9 U	1.8 U	1.9 U	2 U	1.8 U	1.8 U	1.8 U	1.8 U
DIELDRIN	3.6 U	3.6 U	3.7 U	3.8 U	3.6 U	3.5 U	3.4 U	3.4 U
ENDOSULFAN I (ALPHA)	1.9 UR	1.8 UR	1.9 UR	2 UR	1.8 UR	1.8 UR	1.8 U	1.8 U
ENDOSULFAN II (BETA)	3.6 UR	3.6 UR	3.7 UR	3.8 UR	3.6 UR	3.5 UR	3.4 U	3.4 U
ENDRIN	3.6 U	3.6 U	3.7 U	3.8 U	3.6 U	3.5 U	3.4 U	3.4 U
ENDRIN ALDHYDE	3.6 U	3.6 U	3.7 U	3.8 U	3.6 U	3.5 U	3.4 U	3.4 U
ENDRIN KEYTONE	3.6 UJ	3.6 UJ	3.7 UJ	3.8 UJ	3.6 UJ	3.5 UJ	3.4 U	3.4 U
GAMMA-BHC (LINDANE)	1.9 U	1.8 U	1.9 U	2 U	1.8 U	1.8 U	1.8 U	1.8 U
GAMMA-CHLORDANE /2	1.9 U	1.8 U	1.9 U	2 U	1.8 U	1.8 U	1.8 U	1.8 U
HEPTACHLOR	1.9 U	1.8 U	1.9 U	2 U	1.8 U	1.8 U	1.8 U	***1.2 JN***
HEPTACHLOR EPOXIDE	1.9 U	1.8 U	1.9 U	2 U	1.8 U	1.8 U	1.8 U	1.8 U
METHOXYCHLOR	19 U	18 U	19 U	20 U	18 U	18 U	18 U	18 U
PCB-1254 (AROCHLOR 1254)	36 U	36 U	37 U	38 U	36 U	35 U	34 U	34 U
PCB-1260 (AROCHLOR 1260)	36 U	36 U	37 U	38 U	36 U	35 U	34 U	34 U

TABLE 2-2

SOIL SAMPLING SUMMARY - PESTICIDES AND PCBs
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP017SLB	GP017SLB (Duplicate)	GP018SLA	GP018SLA (Duplicate)	GP019SLA	GP019SLB	GP020SLA	GP020SLB
PESTICIDES/PCBS								
4,4'-DDD (P,P'-DDD)	3.7 U	19 U	3.5 UR	3.5 UR	18 U	3.7 U	3.6 UR	3.7 UR
4,4'-DDE (P,P'-DDE)	3.7 U	19 U	3.5 UR	3.5 UR	18 U	3.7 U	3.6 UR	3.7 UR
4,4'-DDT (P,P'-DDT)	*1.2 JN*	19 U	3.5 U	3.5 U	**69**	*1.5 J*	3.6 U	3.7 U
ALDRIN	1.9 U	9.6 U	1.8 U	1.8 U	9.2 U	1.9 U	1.9 U	1.9 U
ALPHA-BHC	1.9 U	9.6 U	1.8 UJ	1.8 UJ	38 U	1.9 U	1.9 UJ	1.9 UJ
BETA-BHC	1.9 U	9.6 U	1.8 U	1.8 U	9.2 U	1.9 U	1.9 U	1.9 U
DELTA-BHC	1.9 U	*5.2 J*	1.8 U	1.8 U	9.2 U	1.9 U	1.9 U	1.9 U
DIELDRIN	3.7 U	19 U	3.5 U	3.5 U	18 U	3.7 U	3.6 U	3.7 U
ENDOSULFAN I (ALPHA)	1.9 U	19 U	1.8 UR	1.8 UR	9.2 U	1.9 U	1.9 UR	1.9 UR
ENDOSULFAN II (BETA)	3.7 U	40 U	3.5 UR	3.5 UR	18 U	3.7 U	3.6 UR	3.7 UR
ENDRIN	3.7 U	68 U	3.5 U	3.5 U	18 U	3.7 U	3.6 U	3.7 U
ENDRIN ALDHYDE	3.7 U	33 U	3.5 U	3.5 U	18 U	*0.76 J*	3.6 U	3.7 U
ENDRIN KEYTONE	3.7 U	19 U	3.5 UJ	3.5 UJ	18 U	3.7 U	3.6 UJ	3.7 UJ
GAMMA-BHC (LINDANE)	1.9 U	9.6 U	1.8 U	1.8 U	9.2 U	1.9 U	1.9 U	1.9 U
GAMMA-CHLORDANE /2	1.9 U	9.6 U	1.8 U	1.8 U	9.2 U	1.9 U	1.9 U	1.9 U
HEPTACHLOR	1.9 U	9.6 U	1.8 U	1.8 U	9.2 U	1.9 U	1.9 U	1.9 U
HEPTACHLOR EPOXIDE	1.9 U	44 U	1.8 U	1.8 U	9.2 U	*0.25 J*	1.9 U	1.9 U
METHOXYCHLOR	19 U	96 U	18 U	18 U	92 U	19 U	19 U	19 U
PCB-1254 (AROCHLOR 1254)	37 U	*3200*	35 U	35 U	180 U	37 U	36 U	37 U
PCB-1260 (AROCHLOR 1260)	37 U	190 U	35 U	35 U	180 U	37 U	36 U	37 U

TABLE 2-2

SOIL SAMPLING SUMMARY - PESTICIDES AND PCBs
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP021SLA	GP021SLB	GP022SLA	GP022SLB	GP023SLA	GP023SLB	GP024SLA	GP024SLB
PESTICIDES/PCBS								
4,4'-DDD (P,P'-DDD)	3.6 UR	3.4 UR	3.8 U	3.7 U	4 U	4.4 U	6.8 UR	*7.4 J*
4,4'-DDE (P,P'-DDE)	3.6 UR	3.4 UR	3.8 U	3.7 U	4 U	*2 J*	6.8 UR	*3.2 J*
4,4'-DDT (P,P'-DDT)	3.6 U	3.4 U	3.8 U	*0.55 J*	4 U	4.4 U	6.8 U	5.6 U
ALDRIN	1.9 U	1.8 U	2 U	1.9 U	2 U	2.3 U	3.5 U	2.9 U
ALPHA-BHC	1.9 UJ	1.8 UJ	2 U	1.9 U	2 U	*1.1 J*	3.5 UJ	2.9 UJ
BETA-BHC	1.9 U	1.8 U	2 U	1.9 U	2 U	2.3 U	3.5 U	2.9 U
DELTA-BHC	1.9 U	1.8 U	2 U	1.9 U	2 U	*0.82 J*	3.5 U	2.9 U
DIELDRIN	3.6 U	3.4 U	3.8 U	3.7 U	4 U	4.4 U	6.8 U	5.6 U
ENDOSULFAN I (ALPHA)	1.9 UR	1.8 UR	2 U	1.9 U	2 U	2.3 U	3.5 UR	2.9 UR
ENDOSULFAN II (BETA)	3.6 UR	3.4 UR	3.8 U	3.7 U	4 U	4.4 U	6.8 UR	5.6 UR
ENDRIN	3.6 U	3.4 U	3.8 U	3.7 U	4 U	4.4 U	6.8 U	5.6 U
ENDRIN ALDHYDE	3.6 U	3.4 U	3.8 U	3.7 U	4 U	4.4 U	6.8 U	5.6 U
ENDRIN KEYTONE	3.6 UJ	3.4 UJ	3.8 U	3.7 U	4 U	4.4 U	6.8 UJ	5.6 UJ
GAMMA-BHC (LINDANE)	1.9 U	1.8 U	2 U	1.9 U	2 U	2.3 U	3.5 U	2.9 U
GAMMA-CHLORDANE /2	1.9 U	1.8 U	2 U	1.9 U	2 U	2.3 U	3.6 U	2.9 U
HEPTACHLOR	1.9 U	1.8 U	2 U	1.9 U	2 U	*0.82 JN*	3.5 U	2.9 U
HEPTACHLOR EPOXIDE	1.9 U	1.8 U	2 U	1.9 U	2 U	2.3 U	3.5 U	2.9 U
METHOXYCHLOR	19 U	18 U	20 U	19 U	20 U	23 U	35 U	29 U
PCB-1254 (AROCHLOR 1254)	36 U	34 U	38 U	37 U	40 U	44 U	68 U	56 U
PCB-1260 (AROCHLOR 1260)	36 U	34 U	38 U	37 U	40 U	44 U	68 U	56 U

TABLE 2-2

SOIL SAMPLING SUMMARY - PESTICIDES AND PCBs
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP025SLA	GP025SLB	GP025SLC	GP026SLA	GP026SLB	GP026SLC	GP027SLA	GP027SLB
PESTICIDES/PCBS								
4,4'-DDD (P,P'-DDD)	3.6 UR	3.4 UR	3.9 UR	3.5 UR	5.1 UR	3.6 UR	3.5 UR	3.4 UR
4,4'-DDE (P,P'-DDE)	3.6 UR	3.4 UR	3.9 UR	3.5 UR	5.1 UR	3.6 UR	3.5 UR	3.4 UR
4,4'-DDT (P,P'-DDT)	3.6 U	3.4 U	3.9 U	3.5 U	5.1 U	3.6 U	3.5 U	3.4 U
ALDRIN	1.8 U	1.8 U	2 U	1.8 U	2.6 U	1.8 U	1.8 U	1.8 U
ALPHA-BHC	1.8 UJ	1.8 UJ	2 UJ	1.8 UJ	2.6 UJ	1.8 UJ	1.8 UJ	1.8 UJ
BETA-BHC	***4.6 N***	1.8 U	2 U	1.8 U	2.6 U	1.8 U	1.8 U	1.8 U
DELTA-BHC	1.8 U	1.8 U	2 U	1.8 U	2.6 U	1.8 U	1.8 U	1.8 U
DIELDRIN	3.6 U	3.4 U	3.9 U	3.5 U	5.1 U	3.6 U	3.5 U	3.4 U
ENDOSULFAN I (ALPHA)	1.8 UR	1.8 UR	2 UR	1.8 UR	2.6 UR	1.8 UR	1.8 UR	1.8 UR
ENDOSULFAN II (BETA)	3.6 UR	3.4 UR	3.9 UR	3.5 UR	5.1 UR	3.6 UR	3.5 UR	3.4 UR
ENDRIN	3.6 U	3.4 U	3.9 U	3.5 U	5.1 U	3.6 U	3.5 U	3.4 U
ENDRIN ALDHYDE	***2.8 J***	3.4 U	3.9 U	3.5 U	***6.4***	3.6 U	3.5 U	3.4 U
ENDRIN KEYTONE	3.6 UJ	3.4 UJ	3.9 UJ	3.5 UJ	***6 J***	3.6 UJ	3.5 UJ	3.4 UJ
GAMMA-BHC (LINDANE)	1.8 U	1.8 U	2 U	1.8 U	2.6 U	1.8 U	1.8 U	1.8 U
GAMMA-CHLORDANE /2	1.8 U	1.8 U	2 U	1.8 U	2.6 U	1.8 U	1.8 U	1.8 U
HEPTACHLOR	1.8 U	1.8 U	2 U	1.8 U	2.6 U	1.8 U	1.8 U	1.8 U
HEPTACHLOR EPOXIDE	1.8 U	1.8 U	2 U	1.8 U	2.6 U	1.8 U	1.8 U	1.8 U
METHOXYCHLOR	18 U	18 U	20 U	18 U	26 U	18 U	18 U	18 U
PCB-1254 (AROCHLOR 1254)	36 U	34 U	39 U	35 U	51 U	36 U	35 U	34 U
PCB-1260 (AROCHLOR 1260)	36 U	34 U	39 U	35 U	51 U	36 U	35 U	34 U

TABLE 2-2

SOIL SAMPLING SUMMARY - PESTICIDES AND PCBs
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP027SLC	GP028SLA	GP028SLB	GP028SLC	GP029SLA	GP029SLB	GP029SLC	GP030SLA
PESTICIDES/PCBS								
4,4'-DDD (P,P'-DDD)	3.5 UR	3.5 UR	3.9 UR	3.5 UR	3.4 U	3.8 U	*2.2 J*	3.5 UR
4,4'-DDE (P,P'-DDE)	3.5 UR	3.5 UR	3.9 UR	3.5 UR	3.4 U	3.8 U	*1.7 J*	3.5 UR
4,4'-DDT (P,P'-DDT)	3.5 U	3.5 U	3.9 U	3.5 U	3.4 U	3.8 U	*6.4*	3.5 U
ALDRIN	1.8 U	1.8 U	2 U	1.8 U	1.7 U	2 U	1.9 U	1.8 U
ALPHA-BHC	1.8 UJ	1.8 UJ	2 UJ	1.8 UJ	1.7 U	2 U	*0.6 JN*	1.8 UJ
BETA-BHC	1.8 U	1.8 U	2 U	1.8 U	1.7 U	2 U	1.9 U	1.8 U
DELTA-BHC	1.8 U	1.8 U	2 U	1.8 U	1.7 U	2 U	1.9 U	1.8 U
DIELDRIN	3.5 U	3.5 U	3.9 U	3.5 U	3.4 U	*0.85 J*	*4.3*	3.5 U
ENDOSULFAN I (ALPHA)	1.8 UR	1.8 UR	2 UR	1.8 UR	1.7 U	2 U	1.9 U	1.8 UR
ENDOSULFAN II (BETA)	3.5 UR	3.5 UR	3.9 UR	3.5 UR	3.4 U	3.8 U	3.7 U	3.5 UR
ENDRIN	*2.4 J*	3.5 U	3.9 U	3.5 U	3.4 U	3.8 U	3.7 U	3.5 U
ENDRIN ALDHYDE	3.5 U	3.5 U	3.9 U	3.5 U	3.4 U	3.8 U	3.7 U	3.5 U
ENDRIN KEYTONE	3.5 UJ	3.5 UJ	3.9 UJ	3.5 UJ	3.4 U	3.8 U	3.7 U	3.5 UJ
GAMMA-BHC (LINDANE)	1.8 U	1.8 U	2 U	1.8 U	1.7 U	2 U	1.9 U	1.8 U
GAMMA-CHLORDANE /2	1.8 U	1.8 U	2 U	1.8 U	1.7 U	2 U	*1 JN*	1.8 U
HEPTACHLOR	1.8 U	1.8 U	2 U	1.8 U	1.7 U	2 U	1.9 U	1.8 U
HEPTACHLOR EPOXIDE	*3.2 N*	1.8 U	2 U	1.8 U	1.7 U	2 U	1.9 U	1.8 U
METHOXYCHLOR	18 U	18 U	20 U	18 U	17 U	20 U	19 U	18 U
PCB-1254 (AROCHLOR 1254)	35 U	35 U	39 U	35 U	34 U	38 U	37 U	35 U
PCB-1260 (AROCHLOR 1260)	35 U	35 U	39 U	35 U	34 U	38 U	37 U	35 U

TABLE 2-2

SOIL SAMPLING SUMMARY - PESTICIDES AND PCBs
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP030SLB	GP030SLC	GP031SLA	GP031SLB	GP032SLA	GP033SLA	GP034SLA	GP034SLB
<u>PESTICIDES/PCBS</u>								
4,4'-DDD (P,P'-DDD)	3.6 UR	3.7 UR	3.6 UR	3.7 UR	3.8 UR	3.5 UR	3.6 UR	9 UR
4,4'-DDE (P,P'-DDE)	3.6 UR	3.7 UR	3.6 UR	3.7 UR	3.8 UR	3.5 UR	3.6 UR	3.7 UR
4,4'-DDT (P,P'-DDT)	3.6 U	3.7 U	3.6 U	3.7 U	3.8 U	3.5 U	3.6 U	3.7 U
ALDRIN	1.9 U	1.9 U	1.9 U	1.9 U	2 U	1.8 U	1.8 U	1.9 U
ALPHA-BHC	1.9 UJ	1.9 UJ	1.9 UJ	1.9 UJ	2 UJ	1.8 UJ	1.8 UJ	1.9 UJ
BETA-BHC	1.9 U	1.9 U	1.9 U	1.9 U	2 U	1.8 U	1.8 U	1.9 U
DELTA-BHC	1.9 U	1.9 U	1.9 U	1.9 U	2 U	1.8 U	1.8 U	3 U
DIELDRIN	3.6 U	3.7 U	3.6 U	3.7 U	3.8 U	3.5 U	3.6 U	3.7 U
ENDOSULFAN I (ALPHA)	1.9 UR	1.9 UR	1.9 UR	1.9 UR	2 UR	1.8 UR	1.8 UR	1.9 UR
ENDOSULFAN II (BETA)	3.6 UR	7 UR	3.6 UR	3.7 UR	3.8 UR	3.5 UR	3.6 UR	3.7 UR
ENDRIN	3.6 U	3.7 U	3.6 U	3.7 U	3.8 U	3.5 U	3.6 U	3.7 U
ENDRIN ALDHYDE	3.6 U	20 U	3.6 U	3.7 U	***4.7***	3.5 U	3.6 U	5 U
ENDRIN KEYTONE	3.6 UJ	3.7 UJ	3.6 UJ	3.7 UJ	3.8 UJ	3.5 UJ	3.6 UJ	3.7 UJ
GAMMA-BHC (LINDANE)	1.9 U	1.9 U	1.9 U	1.9 U	2 U	1.8 U	1.8 U	1.9 U
GAMMA-CHLORDANE /2	1.9 U	1.9 U	1.9 U	1.9 U	2 U	1.8 U	1.8 U	1.9 U
HEPTACHLOR	1.9 U	1.9 U	1.9 U	1.9 U	2 U	1.8 U	1.8 U	1.9 U
HEPTACHLOR EPOXIDE	1.9 U	1.9 U	1.9 U	1.9 U	2 U	1.8 U	1.8 U	1.9 U
METHOXYCHLOR	19 U	19 U	19 U	19 U	20 U	18 U	18 U	19 U
PCB-1254 (AROCHLOR 1254)	36 U	37 U	36 U	37 U	38 U	35 U	36 U	37 U
PCB-1260 (AROCHLOR 1260)	36 U	***210***	36 U	37 U	38 U	35 U	36 U	100 U

TABLE 2-2

SOIL SAMPLING SUMMARY - PESTICIDES AND PCBs
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP034SLC	GP035SLA	GP035SLB	GP035SLC	GP036SLA	GP036SLB	GP036SLC	GP037SLA
PESTICIDES/PCBS								
4,4'-DDD (P,P'-DDD)	4.1 UR	4 UR	3.8 UR	3.7 UR	3.4 UR	3.7 UR	3.5 UR	3.7 UR
4,4'-DDE (P,P'-DDE)	4.1 UR	4 UR	5 UR	3.7 UR	3.4 UR	3.7 UR	3.5 UR	3.7 UR
4,4'-DDT (P,P'-DDT)	4.1 U	4 U	3.8 U	3.7 U	3.4 U	3.7 U	3.5 U	3.7 U
ALDRIN	2.1 U	2 U	2 U	1.9 U	1.8 U	1.9 U	1.8 U	1.9 U
ALPHA-BHC	2.1 UJ	2 UJ	2 UJ	1.9 UJ	1.8 UJ	1.9 UJ	1.8 UJ	1.9 UJ
BETA-BHC	2.1 U	2 U	2 U	1.9 U	1.8 U	1.9 U	1.8 U	1.9 U
DELTA-BHC	2.1 U	2 U	2 U	1.9 U	1.8 U	1.9 U	1.8 U	1.9 U
DIELDRIN	4.1 U	4 U	3.8 U	3.7 U	3.4 U	3.7 U	3.5 U	3.7 U
ENDOSULFAN I (ALPHA)	2.1 UR	2 UR	2 UR	1.9 UR	1.8 UR	1.9 UR	1.8 UR	1.9 UR
ENDOSULFAN II (BETA)	4.1 UR	4 UR	3.8 UR	4 UR	3.4 UR	3.7 UR	3.5 UR	3.7 UR
ENDRIN	4.1 U	4 U	3.8 U	3.7 U	3.4 U	3.7 U	3.5 U	3.7 U
ENDRIN ALDHYDE	4.1 U	4 U	5 U	3.7 U	3.4 U	3.7 U	3.5 U	3.7 U
ENDRIN KEYTONE	4.1 UJ	4 UJ	3.8 UJ	3.7 UJ	3.4 UJ	3.7 UJ	3.5 UJ	3.7 UJ
GAMMA-BHC (LINDANE)	2.1 U	2 U	2 U	1.9 U	1.8 U	1.9 U	1.8 U	1.9 U
GAMMA-CHLORDANE /2	2.1 U	2 U	2 U	1.9 U	1.8 U	1.9 U	1.8 U	1.9 U
HEPTACHLOR	2.1 U	2 U	2 U	1.9 U	1.8 U	1.9 U	1.8 U	1.9 U
HEPTACHLOR EPOXIDE	2.1 U	2 U	2 U	1.9 U	1.8 U	1.9 U	1.8 U	1.9 U
METHOXYCHLOR	21 U	20 U	20 U	19 U	18 U	19 U	18 U	19 U
PCB-1254 (AROCHLOR 1254)	41 U	40 U	38 U	37 U	34 U	37 U	35 U	37 U
PCB-1260 (AROCHLOR 1260)	41 U	40 U	***110***	***87***	34 U	37 U	35 U	37 U

TABLE 2-2

SOIL SAMPLING SUMMARY - PESTICIDES AND PCBs
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP037SLB	GP037SLC	GP038SLA	GP038SLA (Duplicate)	GP038SLB	GP038SLC	GP039SLA	GP040SLA
PESTICIDES/PCBS								
4,4'-DDD (P,P'-DDD)	3.9 UR	3.6 UR	3.7 UR	3.7 UR	3.5 UR	3.6 UR	4.4 UR	***77 N***
4,4'-DDE (P,P'-DDE)	3.9 UR	3.6 UR	3.7 UR	3.7 UR	3.5 UR	3.6 UR	10 UR	***8.5 JN***
4,4'-DDT (P,P'-DDT)	3.9 U	3.6 U	3.7 U	3.7 U	3.5 U	3.6 U	80 U	19 U
ALDRIN	2 U	1.8 U	1.9 U	1.9 U	1.8 U	1.9 U	2.3 U	***4.4 JN***
ALPHA-BHC	2 UJ	1.8 UJ	1.9 UJ	1.9 UJ	1.8 UJ	1.9 UJ	2.3 UJ	13 U
BETA-BHC	***2.4***	1.8 U	1.9 U	***4***	1.8 U	1.9 U	***2.9***	***73***
DELTA-BHC	2 U	1.8 U	1.9 U	1.9 U	1.8 U	1.9 U	2.3 U	110
DIELDRIN	3.9 U	3.6 U	3.7 U	3.7 U	3.5 U	3.6 U	4.4 U	19 U
ENDOSULFAN I (ALPHA)	2 UR	1.8 UR	1.9 UR	1.9 UR	1.8 UR	1.9 UR	2.3 UR	9.6 U
ENDOSULFAN II (BETA)	3.9 UR	3.6 UR	3.7 UR	3.7 UR	3.5 UR	3.6 UR	4.4 UR	19 U
ENDRIN	3.9 U	3.6 U	3.7 U	3.7 U	3.5 U	3.6 U	4.4 U	***3.2 J***
ENDRIN ALDHYDE	3.9 U	3.6 U	3.7 U	3.7 U	3.5 U	3.6 U	4.4 U	19 U
ENDRIN KEYTONE	3.9 UJ	3.6 UJ	3.7 UJ	3.7 UJ	3.5 UJ	3.6 UJ	4.4 UJ	19 U
GAMMA-BHC (LINDANE)	2 U	1.8 U	1.9 U	1.9 U	1.8 U	1.9 U	2.3 U	***16***
GAMMA-CHLORDANE /2	2 U	1.8 U	1.9 U	1.9 U	1.8 U	1.9 U	7 U	9.5 U
HEPTACHLOR	2 U	1.8 U	1.9 U	1.9 U	1.8 U	1.9 U	2.3 U	9.6 U
HEPTACHLOR EPOXIDE	2 U	1.8 U	1.9 U	1.9 U	1.8 U	1.9 U	6.1 N	9.6 U
METHOXYCHLOR	20 U	18 U	19 U	19 U	18 U	19 U	23 U	96 U
PCB-1254 (AROCHLOR 1254)	39 U	36 U	37 U	37 U	35 U	36 U	***1000***	190 U
PCB-1260 (AROCHLOR 1260)	39 U	36 U	37 U	37 U	35 U	36 U	***570***	190 U

TABLE 2-2

SOIL SAMPLING SUMMARY - PESTICIDES AND PCBs
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP040SLB	GP041SLA	GP041SLB	GP041SLC	GP042SLA	GP042SLB	GP042SLC	GP043SLA
PESTICIDES/PCBS								
4,4'-DDD (P,P'-DDD)	3.5 U	3.6 UR	3.6 UR	3.5 UR	4.2 UR	3.6 UR	3.6 UR	3.7 UR
4,4'-DDE (P,P'-DDE)	***0.98 JN***	***6.2 J***	3.6 UR	3.5 UR	4.2 UR	3.6 UR	3.6 UR	3.7 UR
4,4'-DDT (P,P'-DDT)	***12***	3.6 U	3.6 U	3.5 U	4.2 U	***3.6 JN***	3.6 U	3.7 U
ALDRIN	1.8 U	1.9 U	1.8 U	1.8 U	2.2 U	1.9 U	1.8 U	1.9 U
ALPHA-BHC	1.8 U	***17 J***	1.8 UJ	1.8 UJ	2.2 UJ	1.9 UJ	1.8 UJ	1.9 UJ
BETA-BHC	1.8 U	7 U	1.8 U	1.8 U	2.2 U	1.9 U	1.8 U	1.9 U
DELTA-BHC	5.5 U	***23***	1.8 U	1.8 U	2.2 U	1.9 U	1.8 U	1.9 U
DIELDRIN	3.5 U	3.6 U	3.6 U	3.5 U	4.2 U	5 U	3.6 U	3.7 U
ENDOSULFAN I (ALPHA)	1.8 U	1.9 UR	1.8 UR	1.8 UR	2.2 UR	1.9 UR	1.8 UR	1.9 UR
ENDOSULFAN II (BETA)	3.5 U	3.6 UR	3.6 UR	3.5 UR	4.2 UR	3.6 UR	3.6 UR	3.7 UR
ENDRIN	3.5 U	***6.5***	3.6 U	3.5 U	4.2 U	20 U	3.6 U	3.7 U
ENDRIN ALDHYDE	3.5 U	3.6 U	3.6 U	3.5 U	4.2 U	3.6 U	3.6 U	3.7 U
ENDRIN KEYTONE	3.5 U	8 UJ	3.6 UJ	3.5 UJ	4.2 UJ	3.6 UJ	3.6 UJ	3.7 UJ
GAMMA-BHC (LINDANE)	1.8 U	40 U	1.8 U	1.8 U	2.2 U	1.9 U	1.8 U	1.9 U
GAMMA-CHLORDANE /2	1.8 U	***2.5***	1.8 U	1.8 U	2.2 U	1.9 U	1.8 U	1.9 U
HEPTACHLOR	1.8 U	1.9 U	1.8 U	1.8 U	2.2 U	1.9 U	1.8 U	1.9 U
HEPTACHLOR EPOXIDE	1.8 U	1.9 U	1.8 U	1.8 U	***9.1***	1.9 U	1.8 U	1.9 U
METHOXYCHLOR	18 U	***28***	18 U	18 U	22 U	19 U	18 U	19 U
PCB-1254 (AROCHLOR 1254)	35 U	36 U	36 U	35 U	42 U	36 U	36 U	37 U
PCB-1260 (AROCHLOR 1260)	35 U	36 U	36 U	35 U	42 U	***110***	36 U	37 U

TABLE 2-2

SOIL SAMPLING SUMMARY - PESTICIDES AND PCBs
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP044SLA	GP044SLB	GP045SLA	GP045SLB	GP045SLC	GP046SLA	GP046SLB	GP046SLC
PESTICIDES/PCBS								
4,4'-DDD (P,P'-DDD)	3.9 UR	5 UR	3.9 UR	3.6 UR	3.6 UR	3.5 U	20 U	19 U
4,4'-DDE (P,P'-DDE)	3.9 UR	4.3 UR	3.9 UR	3.6 UR	3.6 UR	3.5 U	20 U	19 U
4,4'-DDT (P,P'-DDT)	6 U	30 U	3.9 U	3.6 U	3.6 U	3.5 U	20 U	19 U
ALDRIN	2 U	2.2 U	2 U	1.8 U	1.8 U	1.8 U	10 U	9.7 U
ALPHA-BHC	2 UJ	2.2 UJ	2 UJ	1.8 UJ	1.8 UJ	*0.9 J*	10 U	9.7 U
BETA-BHC	2 U	2.2 U	2 U	1.8 U	1.8 U	1.8 U	10 U	9.7 U
DELTA-BHC	2 U	2.2 U	2 U	1.8 U	1.8 U	1.8 U	10 U	9.7 U
DIELDRIN	3.9 U	4.3 U	3.9 U	3.6 U	3.6 U	3.5 U	20 U	19 U
ENDOSULFAN I (ALPHA)	2 UR	2.2 UR	2 UR	1.8 UR	1.8 UR	1.8 U	19 U	9.7 U
ENDOSULFAN II (BETA)	3.9 UR	4.3 UR	***2.9 J***	3.6 UR	3.6 UR	3.5 U	31 U	160 U
ENDRIN	3.9 U	4.3 U	3.9 U	3.6 U	3.6 U	3.5 U	20 U	19 U
ENDRIN ALDHYDE	60 U	140 U	31	3.6 U	3.6 U	3.5 U	20 U	190 U
ENDRIN KEYTONE	3.9 UJ	4.3 UJ	3.9 UJ	3.6 UJ	3.6 UJ	3.5 U	***23***	19 U
GAMMA-BHC (LINDANE)	2 U	2.2 U	2 U	1.8 U	1.8 U	1.8 U	10 U	***1.5 J***
GAMMA-CHLORDANE /2	2 U	***18 N***	2 U	1.8 U	1.8 U	1.8 U	10 U	9.7 U
HEPTACHLOR	2 U	2.2 U	2 U	1.8 U	1.8 U	1.8 U	10 U	9.7 U
HEPTACHLOR EPOXIDE	2 U	2.2 U	2 U	1.8 U	1.8 U	3.5 U	34 U	130 U
METHOXYCHLOR	20 U	60 U	20 U	18 U	18 U	18 U	***170***	97 U
PCB-1254 (AROCHLOR 1254)	39 U	43 U	39 U	36 U	36 U	***410***	***3300***	***13000***
PCB-1260 (AROCHLOR 1260)	***1100***	***2800***	160 U	***49***	36 U	35 U	200 U	190 U

TABLE 2-2

SOIL SAMPLING SUMMARY - PESTICIDES AND PCBs
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP047SLA	GP047SLB	GP048SLA	GP048SLB	GP048SLC	GP049SLA	GP049SLB	GP049SLC
PESTICIDES/PCBS								
4,4'-DDD (P,P'-DDD)	3.9 UR	3.7 UR	3.9 UR	3.7 UR	3.7 UR	3.5 UR	4 UR	4.2 UR
4,4'-DDE (P,P'-DDE)	3.9 UR	3.7 UR	3.9 UR	3.7 UR	3.7 UR	3.5 UR	6 UR	4.2 UR
4,4'-DDT (P,P'-DDT)	3.9 U	3.7 U	3.9 U	3.7 U	3.7 U	3.5 U	4 U	4.2 U
ALDRIN	2 U	1.9 U	2 U	1.9 U	1.9 U	1.8 U	2.1 U	2.1 U
ALPHA-BHC	2 UJ	1.9 UJ	2 UJ	1.9 UJ	1.9 UJ	1.8 UJ	2.1 UJ	2.1 UJ
BETA-BHC	2 U	1.9 U	2 U	1.9 U	1.9 U	1.8 U	2.1 U	2.1 U
DELTA-BHC	2 U	1.9 U	2 U	1.9 U	1.9 U	1.8 U	2.1 U	2.1 U
DIELDRIN	3.9 U	3.7 U	3.9 U	3.7 U	3.7 U	3.5 U	4 U	4.2 U
ENDOSULFAN I (ALPHA)	2 UR	1.9 UR	2 UR	1.9 UR	1.9 UR	1.8 UR	2.1 UR	2.1 UR
ENDOSULFAN II (BETA)	3.9 UR	3.7 UR	3.9 UR	3.7 UR	3.7 UR	3.5 UR	5 UR	4.2 UR
ENDRIN	3.9 U	3.7 U	3.9 U	3.7 U	3.7 U	3.5 U	4 U	20 U
ENDRIN ALDHYDE	3.9 U	3.7 U	3.9 U	3.7 U	3.7 U	3.5 U	20 U	4.2 U
ENDRIN KEYTONE	3.9 UJ	3.7 UJ	3.9 UJ	3.7 UJ	3.7 UJ	3.5 UJ	4 UJ	4.2 UJ
GAMMA-BHC (LINDANE)	2 U	1.9 U	2 U	1.9 U	1.9 U	1.8 U	2.1 U	2.1 U
GAMMA-CHLORDANE /2	2 U	1.9 U	2 U	1.9 U	1.9 U	1.8 U	2.1 U	2.1 U
HEPTACHLOR	2 U	1.9 U	2 U	1.9 U	1.9 U	1.8 U	2.1 U	2.1 U
HEPTACHLOR EPOXIDE	*5.5*	1.9 U	2 U	1.9 U	1.9 U	1.8 U	2.1 U	2.1 U
METHOXYCHLOR	20 U	19 U	20 U	19 U	19 U	18 U	21 U	21 U
PCB-1254 (AROCHLOR 1254)	39 U	37 U	39 U	37 U	37 U	35 U	40 U	42 U
PCB-1260 (AROCHLOR 1260)	39 U	37 U	39 U	37 U	37 U	35 U	*320*	42 U

TABLE 2-2

SOIL SAMPLING SUMMARY - PESTICIDES AND PCBs
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP050SLA	GP050SLB	GP051SLA	GP051SLB	GP051SLC	GP052SLA	GP052SLB	GP053SLA
PESTICIDES/PCBS								
4,4'-DDD (P,P'-DDD)	3.5 U	4.8 U	4.2 UR	3.9 UR	4.5 UR	3.9 U	5.7 U	4.5 UR
4,4'-DDE (P,P'-DDE)	3.5 U	4.8 U	4.2 UR	3.9 UR	4.5 UR	3.9 U	***10***	4.5 UR
4,4'-DDT (P,P'-DDT)	3.5 U	4.8 U	4.2 U	3.9 U	4.5 U	3.9 U	5.7 U	4.5 U
ALDRIN	1.8 U	2.5 U	2.1 U	***4.1***	2.3 U	2 U	2.9 U	2.3 U
ALPHA-BHC	1.8 U	2.5 U	2.1 UJ	2 UJ	2.3 UJ	2 U	2.9 U	2.3 UJ
BETA-BHC	1.8 U	2.5 U	2.1 U	2 U	2.3 U	2 U	2.9 U	2.3 U
DELTA-BHC	1.8 U	2.5 U	2.1 U	2 U	2.3 U	2 U	2.9 U	2.3 U
DIELDRIN	3.5 U	4.8 U	4.2 U	3.9 U	4.5 U	3.9 U	5.7 U	4.5 U
ENDOSULFAN I (ALPHA)	1.8 U	2.5 U	***2.2 J***	3.9 UR	2.3 UR	2 U	2.9 U	2.3 UR
ENDOSULFAN II (BETA)	3.5 U	4.8 U	4.2 UR	3.9 UR	4.5 UR	***0.86 J***	5.7 U	4.5 UR
ENDRIN	3.5 U	4.8 U	4.2 U	3.9 U	4.5 U	3.9 U	5.7 U	4.5 U
ENDRIN ALDHYDE	3.5 U	4.8 U	7 U	3.9 U	4.5 U	3.9 U	5.7 U	4.5 U
ENDRIN KEYTONE	3.5 U	4.8 U	4.2 UJ	5 UJ	4.5 UJ	3.9 U	***1.5 JN***	4.5 UJ
GAMMA-BHC (LINDANE)	1.8 U	2.5 U	2.1 U	2 U	2.3 U	***0.48 J***	2.9 U	2.3 U
GAMMA-CHLORDANE /2	1.8 U	2.5 U	2.1 U	2 U	2.3 U	2 U	2.9 U	2.3 U
HEPTACHLOR	1.8 U	2.5 U	2.1 U	2 U	2.3 U	2 U	2.9 U	2.3 U
HEPTACHLOR EPOXIDE	1.8 U	2.5 U	2.1 U	2 U	2.3 U	2 U	***1.7 J***	2.3 U
METHOXYCHLOR	18 U	25 U	21 U	20 U	23 U	20 U	29 U	23 U
PCB-1254 (AROCHLOR 1254)	35 U	48 U	42 U	39 U	45 U	***78***	57 U	45 U
PCB-1260 (AROCHLOR 1260)	35 U	48 U	***78***	39 U	45 U	39 U	57 U	45 U

TABLE 2-2

SOIL SAMPLING SUMMARY - PESTICIDES AND PCBs
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP053SLB	GP053SLC	GP054SLA	GP054SLB	GP054SLC	GP055SLA	GP055SLB	GP056SLA
PESTICIDES/PCBS								
4,4'-DDD (P,P'-DDD)	4.8 UR	3.7 UR	18 U	3.9 U	3.7 U	4 UR	3.4 UR	3.4 UR
4,4'-DDE (P,P'-DDE)	4.8 UR	3.7 UR	*21*	3.9 U	3.7 U	4 UR	3.4 UR	3.4 UR
4,4'-DDT (P,P'-DDT)	4.8 U	3.7 U	*8 JN*	3.9 U	3.7 U	4 U	3.4 U	3.4 U
ALDRIN	2.5 U	1.9 U	9.1 U	2 U	1.9 U	2 U	1.8 U	1.8 U
ALPHA-BHC	2.5 UJ	1.9 UJ	9.1 U	*0.23 JN*	*0.2 J*	2 UJ	1.8 UJ	1.8 UJ
BETA-BHC	2.5 U	1.9 U	9.1 U	2 U	1.9 U	2 U	1.8 U	1.8 U
DELTA-BHC	2.5 U	1.9 U	9.1 U	2 U	1.9 U	2 U	1.8 U	1.8 U
DIELDRIN	4.8 U	3.7 U	18 U	3.9 U	3.7 U	4 U	3.4 U	3.4 U
ENDOSULFAN I (ALPHA)	2.5 UR	1.9 UR	9.1 U	2 U	1.9 U	2 UR	1.8 UR	1.8 UR
ENDOSULFAN II (BETA)	4.8 UR	3.7 UR	18 U	3.9 U	3.7 U	4 UR	3.4 UR	3.4 UR
ENDRIN	4.8 U	3.7 U	18 U	3.9 U	3.7 U	4 U	3.4 U	3.4 U
ENDRIN ALDHYDE	4.8 U	3.7 U	18 U	3.9 U	3.7 U	4 U	3.4 U	3.4 U
ENDRIN KEYTONE	4.8 UJ	3.7 UJ	18 U	3.9 U	3.7 U	4 UJ	3.4 UJ	3.4 UJ
GAMMA-BHC (LINDANE)	2.5 U	1.9 U	9.1 U	2 U	1.9 U	2 U	1.8 U	1.8 U
GAMMA-CHLORDANE /2	2.5 U	1.9 U	*32*	2 U	1.9 U	2 U	1.8 U	1.8 U
HEPTACHLOR	2.5 U	1.9 U	*4.8 J*	2 U	1.9 U	2 U	1.8 U	1.8 U
HEPTACHLOR EPOXIDE	2.5 U	1.9 U	*24*	2 U	1.9 U	2 U	1.8 U	1.8 U
METHOXYCHLOR	25 U	19 U	91 U	20 U	19 U	20 U	18 U	18 U
PCB-1254 (AROCHLOR 1254)	48 U	37 U	180 U	39 U	37 U	40 U	34 U	34 U
PCB-1260 (AROCHLOR 1260)	48 U	37 U	180 U	39 U	37 U	40 U	34 U	34 U

TABLE 2-2

SOIL SAMPLING SUMMARY - PESTICIDES AND PCBs
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP201SLA	GP201SLA (Duplicate)	GP202SLA	GP202SLA (Resample)	GP203SLA	GP204SLA	GP205SLA	GP206SLA
PESTICIDES/PCBS								
4,4'-DDD (P,P'-DDD)	3.6 U	3.6 U	3.4 U	10 U	3.7 U	3.5 U	3.7 U	3.8 U
4,4'-DDE (P,P'-DDE)	3.6 U	3.6 U	17 U	9.1 JN	4.1 U	7.2 N	*17*	*5.8*
4,4'-DDT (P,P'-DDT)	*3.7*	*4.1*	*12*	*9.5 J*	3.7 U	*4.3*	*6.7*	*4.9*
ALDRIN	1.9 U	1.8 U	1.8 U	1.9 U	1.9 U	1.8 U	1.9 U	2 U
ALPHA-BHC	1.9 U	1.8 U	1.8 U	1.9 U	1.9 U	1.8 U	1.9 U	2 U
BETA-BHC	1.9 U	1.8 U	1.8 U	1.9 U	1.9 U	1.8 U	1.9 U	2 U
DELTA-BHC	1.9 U	1.8 U	1.8 U	1.9 U	1.9 U	1.8 U	1.9 U	2 U
DIELDRIN	12 N	20 U	3.4 U	3.7 U	3.7 U	3.5 U	3.7 U	3.8 U
ENDOSULFAN I (ALPHA)	1.9 U	1.8 U	1.8 U	1.9 U	1.9 U	1.8 U	1.9 U	2 U
ENDOSULFAN II (BETA)	3.6 U	3.6 U	3.4 U	3.7 U	3.7 U	3.5 U	3.7 U	3.8 U
ENDRIN	3.6 U	3.6 U	3.4 U	3.7 U	3.7 U	3.5 U	3.7 U	3.8 U
ENDRIN ALDHYDE	3.6 U	3.6 U	3.4 U	3.7 U	3.7 U	3.5 U	3.7 U	3.8 U
ENDRIN KEYTONE	3.6 U	3.6 U	3.4 U	3.7 U	3.7 U	3.5 U	3.7 U	3.8 U
GAMMA-BHC (LINDANE)	1.9 U	1.8 U	1.8 U	*15 J*	1.9 U	1.8 U	1.9 U	2 U
GAMMA-CHLORDANE /2	1.9 U	1.8 U	1.8 U	*14 J*	1.9 U	1.8 U	1.9 U	2 U
HEPTACHLOR	1.9 U	1.8 U	1.8 U	1.9 U	1.9 U	1.8 U	1.9 U	2 U
HEPTACHLOR EPOXIDE	1.9 U	1.8 U	1.8 U	*2.9 J*	1.9 U	1.8 U	1.9 U	2 U
METHOXYCHLOR	19 UJ	18 UJ	18 UJ	19 U	19 UJ	18 UJ	19 UJ	20 UJ
PCB-1254 (AROCHLOR 1254)	36 U	36 U	34 U	37 U	37 U	35 U	37 U	38 U
PCB-1260 (AROCHLOR 1260)	36 U	36 U	34 U	37 U	37 U	35 U	37 U	38 U

TABLE 2-2

SOIL SAMPLING SUMMARY - PESTICIDES AND PCBs
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP207SLA	GP208SLA	GP209SLA	GP210SLA	GP211SLA	GP212SLA	GP213SLA	GP214SLA
<u>PESTICIDES/PCBS</u>								
4,4'-DDD (P,P'-DDD)	3.4 U	3.5 U	3.5 U	3.4 U	3.9 U	3.4 U	3.4 U	3.4 U
4,4'-DDE (P,P'-DDE)	3.4 U	3.5 U	***7.7***	3.4 U	3.9 U	4.5 U	***3.3 JN***	***3.9***
4,4'-DDT (P,P'-DDT)	***5.1***	3.5 U	***7.6***	3.4 U	3.9 U	4 U	3.4 U	***4.6***
ALDRIN	1.7 U	1.8 U	1.8 U	1.7 U	2 U	1.8 U	1.8 U	1.7 U
ALPHA-BHC	1.7 U	1.8 U	1.8 U	1.7 U	2 U	1.8 U	1.8 U	1.7 U
BETA-BHC	1.7 U	1.8 U	1.8 U	1.7 U	2 U	1.8 U	1.8 U	1.7 U
DELTA-BHC	1.7 U	1.8 U	1.8 U	1.7 U	2 U	1.8 U	1.8 U	1.7 U
DIELDRIN	3.4 U	3.5 U	3.5 U	3.4 U	3.9 U	4.3 U	3.4 U	3.4 U
ENDOSULFAN I (ALPHA)	1.7 U	1.8 U	1.8 U	1.7 U	2 U	1.8 U	1.8 U	1.7 U
ENDOSULFAN II (BETA)	3.4 U	3.5 U	3.5 U	3.4 U	3.9 U	3.4 U	3.4 U	3.4 U
ENDRIN	3.4 U	3.5 U	3.5 U	3.4 U	3.9 U	3.4 U	3.4 U	***3.4***
ENDRIN ALDHYDE	3.4 U	3.5 U	3.5 U	3.4 U	3.9 U	3.4 U	3.4 U	3.4 U
ENDRIN KEYTONE	3.4 U	3.5 U	3.5 U	3.4 U	3.9 U	3.4 U	3.4 U	3.4 U
GAMMA-BHC (LINDANE)	1.7 U	1.8 U	1.8 U	1.7 U	2 U	1.8 U	1.8 U	1.7 U
GAMMA-CHLORDANE /2	1.7 U	1.8 U	1.8 U	1.7 U	2 U	1.8 U	1.8 U	1.7 U
HEPTACHLOR	1.7 U	1.8 U	1.8 U	1.7 U	2 U	1.8 U	1.8 U	1.7 U
HEPTACHLOR EPOXIDE	1.7 U	1.8 U	1.8 U	1.7 U	2 U	1.8 U	1.8 U	1.7 U
METHOXYCHLOR	17 UJ	18 UJ	18 UJ	17 UJ	20 UJ	18 UJ	18 UJ	17 UJ
PCB-1254 (AROCHLOR 1254)	34 U	35 U	35 U	34 U	39 U	35 U	34 U	34 U
PCB-1260 (AROCHLOR 1260)	34 U	35 U	35 U	34 U	39 U	34 U	34 U	34 U

TABLE 2-3

SOIL SAMPLING SUMMARY - DIOXINS AND FURANS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP001SLA	GP001SLB (Duplicate)	GP002SLA	GP002SLB	GP003SLA	GP003SLB	GP004SLA	GP004SLB
DIOXINS/FURANS								
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	NA	NA	110	NA	NA	NA	240	NA
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	NA	NA	14	NA	NA	NA	27	NA
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	NA	NA	4.8 U	NA	NA	NA	4.8 U	NA
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	NA	NA	4.8 U	NA	NA	NA	4.2 J	NA
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	NA	NA	4.8 U	NA	NA	NA	4.8 U	NA
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	NA	NA	3.6 J	NA	NA	NA	12	NA
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	NA	NA	4.8 U	NA	NA	NA	4.8 U	NA
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	NA	NA	4.8 U	NA	NA	NA	6.8	NA
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	NA	NA	4.8 U	NA	NA	NA	4.8 U	NA
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	NA	NA	4.8 U	NA	NA	NA	4.8 U	NA
1,2,3,7,8-PENTACHLORODIBENZOFURAN	NA	NA	4.8 U	NA	NA	NA	4.8 U	NA
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	NA	NA	4.8 U	NA	NA	NA	4.8 U	NA
2,3,4,7,8-PENTACHLORODIBENZOFURAN	NA	NA	4.8 U	NA	NA	NA	4.8 U	NA
2,3,7,8-TETRACHLORODIBENZODIOXIN	NA	NA	1.9 U	NA	NA	NA	1.9 U	NA
2,3,7,8-TETRACHLORODIBENZOFURAN	NA	NA	0.16 J	NA	NA	NA	0.3 J	NA
HEPTACHLORODIBENZODIOXIN (TOTAL)	NA	NA	240 J	NA	NA	NA	510 J	NA
HEPTACHLORODIBENZOFURAN (TOTAL)	NA	NA	51 J	NA	NA	NA	70 J	NA
HEXACHLORODIBENZODIOXIN (TOTAL)	NA	NA	31 J	NA	NA	NA	110 J	NA
HEXACHLORODIBENZOFURAN (TOTAL)	NA	NA	16 UJ	NA	NA	NA	50 J	NA
OCTACHLORODIBENZODIOXIN	NA	NA	2200 J	NA	NA	NA	2600	NA
OCTACHLORODIBENZOFURAN	NA	NA	63	NA	NA	NA	44	NA
PENTACHLORODIBENZODIOXIN (TOTAL)	NA	NA	4 UJ	NA	NA	NA	28 J	NA
PENTACHLORODIBENZOFURAN (TOTAL)	NA	NA	4.8 UJ	NA	NA	NA	10 UJ	NA
TEQ (TOXIC EQUIV. VALUE, FROM I-TEF/89)	NA	NA	3.9 J	NA	NA	NA	7.7	NA
TETRACHLORODIBENZODIOXIN (TOTAL)	NA	NA	1.9 UJ	NA	NA	NA	5.4 UJ	NA
TETRACHLORODIBENZOFURAN (TOTAL)	NA	NA	0.16 J	NA	NA	NA	0.3 J	NA

Data Qualifiers:

U = Material was analyzed but not detected. The number is the minimum quantitation limit

R = QC indicates that data is unusable.

J = Estimated value. N = Presumptive evidence of presence of material

Concentrations reported in ng/kg.

TABLE 2-3

SOIL SAMPLING SUMMARY - DIOXINS AND FURANS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP005SLA	GP005SLB	GP006SLA	GP006SLB	GP007SLA	GP007SLA (Duplicate)	GP007SLB	GP007SLB (Duplicate)
DIOXINS/FURANS								
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	NA	NA	230	NA	290	330	NA	NA
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	NA	NA	12	NA	10	9.5	NA	NA
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	NA	NA	4.7 U	NA	4.7 U	4.8 U	NA	NA
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	NA	NA	3 J	NA	4.7 U	4.8 U	NA	NA
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	NA	NA	4.7 U	NA	4.7 U	4.8 U	NA	NA
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	NA	NA	6.7	NA	6	7.2	NA	NA
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	NA	NA	4.7 U	NA	4.7 U	4.8 U	NA	NA
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	NA	NA	8.8	NA	18	21	NA	NA
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	NA	NA	4.7 U	NA	4.7 U	4.8 U	NA	NA
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	NA	NA	4.7 U	NA	4.7 U	4.8 U	NA	NA
1,2,3,7,8-PENTACHLORODIBENZOFURAN	NA	NA	4.7 U	NA	4.7 U	4.8 U	NA	NA
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	NA	NA	4.7 U	NA	4.7 U	4.8 U	NA	NA
2,3,4,7,8-PENTACHLORODIBENZOFURAN	NA	NA	4.7 U	NA	4.7 U	4.8 U	NA	NA
2,3,7,8-TETRACHLORODIBENZODIOXIN	NA	NA	1.9 U	NA	1.9 U	1.9 U	NA	NA
2,3,7,8-TETRACHLORODIBENZOFURAN	NA	NA	0.16 J	NA	0.26 J	0.21 J	NA	NA
HEPTACHLORODIBENZODIOXIN (TOTAL)	NA	NA	800 J	NA	650 J	720 J	NA	NA
HEPTACHLORODIBENZOFURAN (TOTAL)	NA	NA	39 J	NA	29 J	30 J	NA	NA
HEXACHLORODIBENZODIOXIN (TOTAL)	NA	NA	98 J	NA	150 J	140 J	NA	NA
HEXACHLORODIBENZOFURAN (TOTAL)	NA	NA	19 UJ	NA	16 UJ	14 UJ	NA	NA
OCTACHLORODIBENZODIOXIN	NA	NA	6000	NA	9600	7100	NA	NA
OCTACHLORODIBENZOFURAN	NA	NA	37	NA	28	24	NA	NA
PENTACHLORODIBENZODIOXIN (TOTAL)	NA	NA	12 UJ	NA	20 J	19 J	NA	NA
PENTACHLORODIBENZOFURAN (TOTAL)	NA	NA	4.7 UJ	NA	4.7 UJ	5.9 UJ	NA	NA
TEQ (TOXIC EQUIV. VALUE, FROM I-TEF/89)	NA	NA	10	NA	15	13	NA	NA
TETRACHLORODIBENZODIOXIN (TOTAL)	NA	NA	5.2 UJ	NA	7.5 UJ	7.4 UJ	NA	NA
TETRACHLORODIBENZOFURAN (TOTAL)	NA	NA	0.16 J	NA	0.26 J	0.21 J	NA	NA

TABLE 2-3

SOIL SAMPLING SUMMARY - DIOXINS AND FURANS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP008SLA	GP008SLB	GP009SLA	GP009SLB	GP010SLA	GP010SLB	GP011SLA	GP012SLA
DIOXINS/FURANS								
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	310	NA	NA	NA	400	NA	NA	45
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	36	NA	NA	NA	4.8 U	NA	NA	4.7 U
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	4.8 U	NA	NA	NA	4.8 U	NA	NA	4.7 U
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	4.8 J	NA	NA	NA	4.8 U	NA	NA	4.7 U
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	4.8 U	NA	NA	NA	4.8 U	NA	NA	4.7 U
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	12	NA	NA	NA	6.6 J	NA	NA	4.7 U
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	4.8 U	NA	NA	NA	4.8 U	NA	NA	4.7 U
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	10	NA	NA	NA	12	NA	NA	4.7 U
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	4.8 U	NA	NA	NA	4.8 UR	NA	NA	4.7 U
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	4.8 U	NA	NA	NA	4.8 U	NA	NA	4.7 U
1,2,3,7,8-PENTACHLORODIBENZOFURAN	4.8 U	NA	NA	NA	4.8 UR	NA	NA	4.7 U
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	4.8 U	NA	NA	NA	4.8 U	NA	NA	4.7 U
2,3,4,7,8-PENTACHLORODIBENZOFURAN	4.8 U	NA	NA	NA	4.8 U	NA	NA	4.7 U
2,3,7,8-TETRACHLORODIBENZODIOXIN	1.9 U	NA	NA	NA	1.9 U	NA	NA	1.9 U
2,3,7,8-TETRACHLORODIBENZOFURAN	1.9 U	NA	NA	NA	1.9 U	NA	NA	1.9 U
HEPTACHLORODIBENZODIOXIN (TOTAL)	720 J	NA	NA	NA	810 J	NA	NA	91 J
HEPTACHLORODIBENZOFURAN (TOTAL)	110 J	NA	NA	NA	7.8 UJ	NA	NA	14 J
HEXACHLORODIBENZODIOXIN (TOTAL)	100 J	NA	NA	NA	76 J	NA	NA	13 UJ
HEXACHLORODIBENZOFURAN (TOTAL)	54 J	NA	NA	NA	5.7 UJ	NA	NA	6.5 UJ
OCTACHLORODIBENZODIOXIN	6800	NA	NA	NA	17000 J	NA	NA	1200
OCTACHLORODIBENZOFURAN	97	NA	NA	NA	12 U	NA	NA	14 U
PENTACHLORODIBENZODIOXIN (TOTAL)	12 UJ	NA	NA	NA	6.2 UJ	NA	NA	4.7 UJ
PENTACHLORODIBENZOFURAN (TOTAL)	15 UJ	NA	NA	NA	4.8 UJ	NA	NA	4.7 UJ
TEQ (TOXIC EQUIV. VALUE, FROM I-TEF/89)	13	NA	NA	NA	23 J	NA	NA	1.6
TETRACHLORODIBENZODIOXIN (TOTAL)	4.9 UJ	NA	NA	NA	1.9 UJ	NA	NA	1.9 UJ
TETRACHLORODIBENZOFURAN (TOTAL)	9.1 UJ	NA	NA	NA	3 UJ	NA	NA	1.9 UJ

TABLE 2-3

SOIL SAMPLING SUMMARY - DIOXINS AND FURANS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP013SLA	GP013SLB	GP015SLA	GP015SLB	GP016SLA	GP016SLB	GP017SLA	GP017SLA (Duplicate)
DIOXINS/FURANS								
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	NA	NA	1000 J	NA	590	NA	1200	1000
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	NA	NA	230	NA	91	NA	310 J	280 J
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	NA	NA	15	NA	6.2 U	NA	18	25
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	NA	NA	12	NA	4.5 U	NA	14 J	16 J
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	NA	NA	8.4	NA	4.5 U	NA	15 J	20 J
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	NA	NA	50	NA	31 J	NA	52 J	62 J
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	NA	NA	8.9	NA	3.8 J	NA	19	19
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	NA	NA	24	NA	7.7 J	NA	30	40
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	NA	NA	4.6 U	NA	4.5 U	NA	4.4 UR	5.5 UR
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	NA	NA	4.9	NA	4.5 U	NA	9.7	13
1,2,3,7,8-PENTACHLORODIBENZOFURAN	NA	NA	4.6 U	NA	4.5 U	NA	1.9 J	3.1 J
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	NA	NA	7.5	NA	4.5 U	NA	20 J	19 J
2,3,4,7,8-PENTACHLORODIBENZOFURAN	NA	NA	4.6 U	NA	4.5 U	NA	12 J	9.6 J
2,3,7,8-TETRACHLORODIBENZODIOXIN	NA	NA	1.8 U	NA	1.8 U	NA	3.5 U	1.1 J
2,3,7,8-TETRACHLORODIBENZOFURAN	NA	NA	0.83 J	NA	0.47 J	NA	3.5 U	4 U
HEPTACHLORODIBENZODIOXIN (TOTAL)	NA	NA	2100 J	NA	1300 J	NA	2700 J	2500 J
HEPTACHLORODIBENZOFURAN (TOTAL)	NA	NA	770 J	NA	290 J	NA	1000 J	1100 J
HEXACHLORODIBENZODIOXIN (TOTAL)	NA	NA	320 J	NA	100 J	NA	410 J	520 J
HEXACHLORODIBENZOFURAN (TOTAL)	NA	NA	360 J	NA	130 J	NA	730 J	950 J
OCTACHLORODIBENZODIOXIN	NA	NA	14000	NA	4400	NA	17000 J	12000
OCTACHLORODIBENZOFURAN	NA	NA	690	NA	250	NA	1200	1000 J
PENTACHLORODIBENZODIOXIN (TOTAL)	NA	NA	37 J	NA	23 J	NA	87 J	81 J
PENTACHLORODIBENZOFURAN (TOTAL)	NA	NA	92 J	NA	32 UJ	NA	460 J	970 J
TEQ (TOXIC EQUIV. VALUE, FROM I-TEF/89)	NA	NA	41 J	NA	16 J	NA	59 J	150 J
TETRACHLORODIBENZODIOXIN (TOTAL)	NA	NA	18 J	NA	7.3 UJ	NA	22 J	43 J
TETRACHLORODIBENZOFURAN (TOTAL)	NA	NA	49 J	NA	0.47 J	NA	260 J	280 J

TABLE 2-3

SOIL SAMPLING SUMMARY - DIOXINS AND FURANS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP017SLB	GP017SLB (Duplicate)	GP018SLA	GP018SLA (Duplicate)	GP019SLA	GP019SLB	GP020SLA	GP020SLB
DIOXINS/FURANS								
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	NA	NA	110	130	520	NA	160	110
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	NA	NA	15	15	72 J	NA	11	4.7 U
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	NA	NA	4.7 U	4.5 U	5.2 U	NA	4.8 U	4.7 U
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	NA	NA	4.7 U	4.5 U	5.6 U	NA	4.8 U	4.7 U
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	NA	NA	4.7 U	4.5 U	5.2 U	NA	4.8 U	4.7 U
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	NA	NA	6.9	7.3	30 J	NA	5.4	4.7 U
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	NA	NA	4.7 U	4.5 U	5.2 U	NA	4.8 U	4.7 U
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	NA	NA	4.7 U	4.5 U	13	NA	4.8 J	4.7 U
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	NA	NA	4.7 U	4.5 U	5.2 UR	NA	4.8 U	4.7 U
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	NA	NA	4.7 U	4.5 U	5.2 U	NA	4.8 U	4.7 U
1,2,3,7,8-PENTACHLORODIBENZOFURAN	NA	NA	4.7 U	4.5 U	5.2 UR	NA	4.8 U	4.7 U
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	NA	NA	4.7 U	4.5 U	3.2 J	NA	4.8 U	4.7 U
2,3,4,7,8-PENTACHLORODIBENZOFURAN	NA	NA	4.7 U	4.5 U	5.2 U	NA	4.8 U	4.7 U
2,3,7,8-TETRACHLORODIBENZODIOXIN	NA	NA	1.9 U	1.8 U	0.54 J	NA	1.9 U	1.9 U
2,3,7,8-TETRACHLORODIBENZOFURAN	NA	NA	0.61 J	0.14 J	4.1 U	NA	1.9 U	1.9 U
HEPTACHLORODIBENZODIOXIN (TOTAL)	NA	NA	230 J	270 J	520 J	NA	390 J	260 J
HEPTACHLORODIBENZOFURAN (TOTAL)	NA	NA	44 J	46 J	240 J	NA	31 J	4.7 UJ
HEXACHLORODIBENZODIOXIN (TOTAL)	NA	NA	40 J	51 J	240 J	NA	59 J	24 J
HEXACHLORODIBENZOFURAN (TOTAL)	NA	NA	31 J	37 J	140 J	NA	17 UJ	4.7 UJ
OCTACHLORODIBENZODIOXIN	NA	NA	1600	1600 J	5300	NA	11000	19000
OCTACHLORODIBENZOFURAN	NA	NA	40	37 J	220	NA	26	9.3 U
PENTACHLORODIBENZODIOXIN (TOTAL)	NA	NA	7.6 UJ	7.5 UJ	18 UJ	NA	6.3 UJ	4.7 UJ
PENTACHLORODIBENZOFURAN (TOTAL)	NA	NA	11 UJ	13 UJ	27 J	NA	4.8 UJ	4.7 UJ
TEQ (TOXIC EQUIV. VALUE, FROM I-TEF/89)	NA	NA	3.6	3.8 J	17 J	NA	14	20
TETRACHLORODIBENZODIOXIN (TOTAL)	NA	NA	1.9 UJ	1.8 UJ	0.54 J	NA	4.8 UJ	6.4 UJ
TETRACHLORODIBENZOFURAN (TOTAL)	NA	NA	0.61 J	0.14 J	48 J	NA	1.9 UJ	1.9 UJ

TABLE 2-3

SOIL SAMPLING SUMMARY - DIOXINS AND FURANS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP021SLA	GP021SLB	GP022SLA	GP022SLB	GP023SLA	GP023SLB	GP024SLA	GP024SLB
DIOXINS/FURANS								
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	NA	NA	*440*	NA	*1600 J*	NA	NA	NA
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	NA	NA	10 U	NA	*160 J*	NA	NA	NA
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	NA	NA	10 U	NA	10 U	NA	NA	NA
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	NA	NA	10 U	NA	*10 J*	NA	NA	NA
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	NA	NA	10 U	NA	6 U	NA	NA	NA
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	NA	NA	*8.9 J*	NA	*71 J*	NA	NA	NA
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	NA	NA	10 U	NA	*6.6*	NA	NA	NA
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	NA	NA	*24*	NA	*25*	NA	NA	NA
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	NA	NA	10 UR	NA	6 UR	NA	NA	NA
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	NA	NA	10 U	NA	*5.6*	NA	NA	NA
1,2,3,7,8-PENTACHLORODIBENZOFURAN	NA	NA	10 UR	NA	*1.6 J*	NA	NA	NA
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	NA	NA	10 U	NA	*4.7 J*	NA	NA	NA
2,3,4,7,8-PENTACHLORODIBENZOFURAN	NA	NA	10 U	NA	5 U	NA	NA	NA
2,3,7,8-TETRACHLORODIBENZODIOXIN	NA	NA	*0.16 J*	NA	*0.8 J*	NA	NA	NA
2,3,7,8-TETRACHLORODIBENZOFURAN	NA	NA	2.1 U	NA	4.8 U	NA	NA	NA
HEPTACHLORODIBENZODIOXIN (TOTAL)	NA	NA	*1000 J*	NA	6 UJ	NA	NA	NA
HEPTACHLORODIBENZOFURAN (TOTAL)	NA	NA	10 UJ	NA	*470 J*	NA	NA	NA
HEXACHLORODIBENZODIOXIN (TOTAL)	NA	NA	*170 J*	NA	*440 J*	NA	NA	NA
HEXACHLORODIBENZOFURAN (TOTAL)	NA	NA	10 UJ	NA	*330 J*	NA	NA	NA
OCTACHLORODIBENZODIOXIN	NA	NA	*68000*	NA	*23000*	NA	NA	NA
OCTACHLORODIBENZOFURAN	NA	NA	25 U	NA	*280*	NA	NA	NA
PENTACHLORODIBENZODIOXIN (TOTAL)	NA	NA	16 UJ	NA	*38 J*	NA	NA	NA
PENTACHLORODIBENZOFURAN (TOTAL)	NA	NA	10 UJ	NA	*67 J*	NA	NA	NA
TEQ (TOXIC EQUIV. VALUE, FROM I-TEF/89)	NA	NA	*76*	NA	*56 J*	NA	NA	NA
TETRACHLORODIBENZODIOXIN (TOTAL)	NA	NA	*0.16 J*	NA	*14 J*	NA	NA	NA
TETRACHLORODIBENZOFURAN (TOTAL)	NA	NA	4.2 UJ	NA	*27 J*	NA	NA	NA

TABLE 2-3

SOIL SAMPLING SUMMARY - DIOXINS AND FURANS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP025SLA	GP025SLB	GP025SLC	GP026SLA	GP026SLB	GP026SLC	GP027SLA	GP027SLB
DIOXINS/FURANS								
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	4300	NA	NA	1100	NA	NA	430	NA
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	590	NA	NA	140	NA	NA	36	NA
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	78	NA	NA	11	NA	NA	4.7 U	NA
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	63	NA	NA	15 U	NA	NA	6.7	NA
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	34	NA	NA	5.2 U	NA	NA	4.7 U	NA
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	370	NA	NA	51	NA	NA	21	NA
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	37	NA	NA	5.7	NA	NA	4.7 U	NA
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	130	NA	NA	27	NA	NA	13	NA
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	4.8 U	NA	NA	4.8 U	NA	NA	4.7 U	NA
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	96	NA	NA	8.6	NA	NA	4.7 U	NA
1,2,3,7,8-PENTACHLORODIBENZOFURAN	5.5	NA	NA	4.8 U	NA	NA	4.7 U	NA
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	23	NA	NA	4.8 U	NA	NA	4.7 U	NA
2,3,4,7,8-PENTACHLORODIBENZOFURAN	7.4 U	NA	NA	4.8 U	NA	NA	4.7 U	NA
2,3,7,8-TETRACHLORODIBENZODIOXIN	6.7	NA	NA	1.9 U	NA	NA	1.9 U	NA
2,3,7,8-TETRACHLORODIBENZOFURAN	3	NA	NA	0.58 J	NA	NA	0.25 J	NA
HEPTACHLORODIBENZODIOXIN (TOTAL)	8900 J	NA	NA	2600 J	NA	NA	920 J	NA
HEPTACHLORODIBENZOFURAN (TOTAL)	680 J	NA	NA	460 J	NA	NA	110 J	NA
HEXACHLORODIBENZODIOXIN (TOTAL)	1800 J	NA	NA	370 J	NA	NA	160 J	NA
HEXACHLORODIBENZOFURAN (TOTAL)	1100 J	NA	NA	200 J	NA	NA	57 J	NA
OCTACHLORODIBENZODIOXIN	63000	NA	NA	15000	NA	NA	130000	NA
OCTACHLORODIBENZOFURAN	1100	NA	NA	390 J	NA	NA	87 J	NA
PENTACHLORODIBENZODIOXIN (TOTAL)	290 J	NA	NA	43 J	NA	NA	13 UJ	NA
PENTACHLORODIBENZOFURAN (TOTAL)	150 J	NA	NA	30 UJ	NA	NA	9.3 UJ	NA
TEQ (TOXIC EQUIV. VALUE, FROM I-TEF/89)	230	NA	NA	41	NA	NA	140	NA
TETRACHLORODIBENZODIOXIN (TOTAL)	92 J	NA	NA	9.4 J	NA	NA	5 UJ	NA
TETRACHLORODIBENZOFURAN (TOTAL)	76 J	NA	NA	0.58 J	NA	NA	0.25 J	NA

TABLE 2-3

SOIL SAMPLING SUMMARY - DIOXINS AND FURANS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP027SLC	GP028SLA	GP028SLB	GP028SLC	GP029SLA	GP029SLB	GP029SLC	GP030SLA
DIOXINS/FURANS								
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	NA	***220***	NA	NA	***100***	NA	NA	***80***
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	NA	***13***	NA	NA	4.9 U	NA	NA	4.9 U
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	NA	5.3 U	NA	NA	4.9 U	NA	NA	4.7 U
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	NA	5.3 U	NA	NA	4.9 U	NA	NA	4.7 U
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	NA	5.3 U	NA	NA	4.9 U	NA	NA	4.7 U
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	NA	5.3 U	NA	NA	4.9 U	NA	NA	4.7 U
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	NA	5.3 U	NA	NA	4.9 U	NA	NA	4.7 U
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	NA	6.8 U	NA	NA	4.9 U	NA	NA	4.7 U
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	NA	5.3 U	NA	NA	4.9 UR	NA	NA	4.7 U
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	NA	5.3 U	NA	NA	4.9 U	NA	NA	4.7 U
1,2,3,7,8-PENTACHLORODIBENZOFURAN	NA	5.3 U	NA	NA	4.9 UR	NA	NA	4.7 U
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	NA	5.3 U	NA	NA	4.9 U	NA	NA	4.7 U
2,3,4,7,8-PENTACHLORODIBENZOFURAN	NA	5.3 U	NA	NA	4.9 U	NA	NA	4.7 U
2,3,7,8-TETRACHLORODIBENZODIOXIN	NA	2.1 U	NA	NA	1.9 U	NA	NA	1.9 U
2,3,7,8-TETRACHLORODIBENZOFURAN	NA	***0.17 J***	NA	NA	3.1 U	NA	NA	1.9 U
HEPTACHLORODIBENZODIOXIN (TOTAL)	NA	***530 J***	NA	NA	***230 J***	NA	NA	***170 J***
HEPTACHLORODIBENZOFURAN (TOTAL)	NA	***41 J***	NA	NA	4.9 UJ	NA	NA	***13 J***
HEXACHLORODIBENZODIOXIN (TOTAL)	NA	***63 J***	NA	NA	***24 J***	NA	NA	***23 J***
HEXACHLORODIBENZOFURAN (TOTAL)	NA	16 UJ	NA	NA	8.8 UJ	NA	NA	6.2 U
OCTACHLORODIBENZODIOXIN	NA	***22000***	NA	NA	***6800 J***	NA	NA	***7200***
OCTACHLORODIBENZOFURAN	NA	***50 J***	NA	NA	12 U	NA	NA	***16 J***
PENTACHLORODIBENZODIOXIN (TOTAL)	NA	6.7 UJ	NA	NA	4.9 UJ	NA	NA	4.7 UJ
PENTACHLORODIBENZOFURAN (TOTAL)	NA	5.3 UJ	NA	NA	***17 J***	NA	NA	4.7 UJ
TEQ (TOXIC EQUIV. VALUE, FROM I-TEF/89)	NA	***24***	NA	NA	***7.8 J***	NA	NA	***8***
TETRACHLORODIBENZODIOXIN (TOTAL)	NA	3.3 UJ	NA	NA	1.9 UJ	NA	NA	1.9 UJ
TETRACHLORODIBENZOFURAN (TOTAL)	NA	***0.17 J***	NA	NA	***14 J***	NA	NA	1.9 UJ

TABLE 2-3

SOIL SAMPLING SUMMARY - DIOXINS AND FURANS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP030SLB	GP030SLC	GP031SLA	GP031SLB	GP032SLA	GP033SLA	GP034SLA	GP034SLB
DIOXINS/FURANS								
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	NA	NA	*270*	NA	*1900*	*2100*	*300*	*5000*
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	NA	NA	*29*	NA	*250*	*250*	*30*	*470*
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	NA	NA	4.7 U	NA	*17*	*14*	4.7 U	*26*
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	NA	NA	4.7 U	NA	*31*	*36*	*3.1 J*	*46*
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	NA	NA	4.7 U	NA	*8.3*	*11*	4.7 U	*23*
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	NA	NA	12 U	NA	*82*	*120*	*13*	*300*
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	NA	NA	4.7 U	NA	*11*	*14*	4.7 U	*29*
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	NA	NA	*4.8*	NA	*49*	*68*	*11*	*120*
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	NA	NA	4.7 U	NA	4.8 U	4.8 U	4.7 U	4.9 U
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	NA	NA	4.7 U	NA	*13*	*18*	4.7 U	*30*
1,2,3,7,8-PENTACHLORODIBENZOFURAN	NA	NA	4.7 U	NA	4.8 U	4.8 U	4.7 U	*7*
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	NA	NA	4.7 U	NA	*6.9*	*11*	4.7 U	*24*
2,3,4,7,8-PENTACHLORODIBENZOFURAN	NA	NA	4.7 U	NA	4.8 U	4.8 U	4.7 U	10 U
2,3,7,8-TETRACHLORODIBENZODIOXIN	NA	NA	1.9 U	NA	1.9 U	2.2 U	1.9 U	*3.5*
2,3,7,8-TETRACHLORODIBENZOFURAN	NA	NA	*0.19 J*	NA	*1.2 J*	*2*	*0.3 J*	*6.1*
HEPTACHLORODIBENZODIOXIN (TOTAL)	NA	NA	*560 J*	NA	*3900 J*	*4300 J*	*650 J*	*11000 J*
HEPTACHLORODIBENZOFURAN (TOTAL)	NA	NA	*99 J*	NA	*690 J*	*660 J*	*83 J*	*1400 J*
HEXACHLORODIBENZODIOXIN (TOTAL)	NA	NA	*70 J*	NA	*580 J*	*770 J*	*120 J*	*1600 J*
HEXACHLORODIBENZOFURAN (TOTAL)	NA	NA	*48 J*	NA	*410 J*	*460 J*	*42 J*	*1100 J*
OCTACHLORODIBENZODIOXIN	NA	NA	*3000 J*	NA	*22000*	*23000*	*17000*	*71000*
OCTACHLORODIBENZOFURAN	NA	NA	*81*	NA	*380 J*	*430 J*	*69 J*	*740 J*
PENTACHLORODIBENZODIOXIN (TOTAL)	NA	NA	9.5 UJ	NA	*58 J*	*91 J*	18 UJ	*230 J*
PENTACHLORODIBENZOFURAN (TOTAL)	NA	NA	16 UJ	NA	*61 J*	*74 J*	8.6 UJ	*280 J*
TEQ (TOXIC EQUIV. VALUE, FROM I-TEF/89)	NA	NA	*6.6 J*	NA	*70*	*82*	*23*	*200*
TETRACHLORODIBENZODIOXIN (TOTAL)	NA	NA	2.1 UJ	NA	*12 J*	*10 J*	4.3 UJ	*58 J*
TETRACHLORODIBENZOFURAN (TOTAL)	NA	NA	*0.19 J*	NA	*1.2 J*	*2 J*	*0.3 J*	*160 J*

TABLE 2-3

SOIL SAMPLING SUMMARY - DIOXINS AND FURANS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP034SLC	GP035SLA	GP035SLB	GP035SLC	GP036SLA	GP036SLB	GP036SLC	GP037SLA
DIOXINS/FURANS								
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	48	320	NA	NA	120	NA	NA	14000
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	4.8 U	11	NA	NA	11	NA	NA	830
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	4.8 U	4.6 U	NA	NA	4.5 U	NA	NA	63
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	4.8 U	4.6 U	NA	NA	4.5 U	NA	NA	210
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	4.8 U	4.6 U	NA	NA	4.5 U	NA	NA	44
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	4.8 U	7	NA	NA	4.5 U	NA	NA	1300
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	4.8 U	4.6 U	NA	NA	4.5 U	NA	NA	23
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	4.8 U	8.4	NA	NA	4.5 U	NA	NA	790
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	4.8 U	4.6 U	NA	NA	4.5 U	NA	NA	4.5 U
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	4.8 U	4.6 U	NA	NA	4.5 U	NA	NA	110
1,2,3,7,8-PENTACHLORODIBENZOFURAN	4.8 U	4.8 U	NA	NA	4.5 U	NA	NA	8.2
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	4.8 U	4.6 U	NA	NA	4.5 U	NA	NA	20
2,3,4,7,8-PENTACHLORODIBENZOFURAN	4.8 U	4.6 U	NA	NA	4.5 U	NA	NA	15
2,3,7,8-TETRACHLORODIBENZODIOXIN	1.9 U	1.9 U	NA	NA	1.8 U	NA	NA	14
2,3,7,8-TETRACHLORODIBENZOFURAN	1.9 U	1.9 U	NA	NA	1.8 U	NA	NA	5.8
HEPTACHLORODIBENZODIOXIN (TOTAL)	130 J	720 J	NA	NA	260 J	NA	NA	29000 J
HEPTACHLORODIBENZOFURAN (TOTAL)	7.6 UJ	31 J	NA	NA	31 J	NA	NA	900 J
HEXACHLORODIBENZODIOXIN (TOTAL)	47 J	82 J	NA	NA	34 J	NA	NA	6700 J
HEXACHLORODIBENZOFURAN (TOTAL)	6.1 UJ	19 J	NA	NA	20 J	NA	NA	690 J
OCTACHLORODIBENZODIOXIN	730 J	27000	NA	NA	4400	NA	NA	170000
OCTACHLORODIBENZOFURAN	10 U	33 J	NA	NA	22 J	NA	NA	2500
PENTACHLORODIBENZODIOXIN (TOTAL)	7.7 UJ	11 UJ	NA	NA	4.5 UJ	NA	NA	1400 J
PENTACHLORODIBENZOFURAN (TOTAL)	4.8 UJ	6.8 UJ	NA	NA	4.5 UJ	NA	NA	210 J
TEQ (TOXIC EQUIV. VALUE, FROM I-TEF/89)	1.2 J	32	NA	NA	5.7	NA	NA	640
TETRACHLORODIBENZODIOXIN (TOTAL)	4.9 UJ	4.8 UJ	NA	NA	1.8 UJ	NA	NA	700 J
TETRACHLORODIBENZOFURAN (TOTAL)	1.9 UJ	3.4 UJ	NA	NA	1.8 UJ	NA	NA	140 J

TABLE 2-3

SOIL SAMPLING SUMMARY - DIOXINS AND FURANS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP037SLB	GP037SLC	GP038SLA	GP038SLA (Duplicate)	GP038SLB	GP038SLC	GP039SLA	GP040SLA
DIOXINS/FURANS								
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	1700	72	3800	2200	39	64	5000	760000
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	64	4.7 U	280	260	4.7 U	4.8 U	1700	110000 J
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	4.6 U	4.7 U	20	24	4.7 U	4.8 U	37	9800
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	28	4.7 U	22	25	4.7 U	4.8 U	28	4000 J
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	4.6 U	4.7 U	13	13	4.7 U	4.8 U	38	3300 J
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	160	8.2	110	100	4.7 U	4.8 U	280	47000 J
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	4.6 U	4.7 U	14	15	4.7 U	4.8 U	34	1600
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	85	4.7 U	48	54	4.7 U	4.8 U	98	12000
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	4.6 U	4.7 U	4.6 U	4.5 U	4.7 U	4.8 U	9.1 U	580 UR
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	13	4.7 U	14	13	4.7 U	4.8 U	24	1800
1,2,3,7,8-PENTACHLORODIBENZOFURAN	4.6 U	4.7 U	4.6 U	4.5 U	4.7 U	4.8 U	14	280 J
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	4.6 U	4.7 U	8.9	10	4.7 U	4.8 U	35	1500
2,3,4,7,8-PENTACHLORODIBENZOFURAN	4.6 U	4.7 U	4.6 U	4.5 U	4.7 U	4.8 U	18	540 J
2,3,7,8-TETRACHLORODIBENZODIOXIN	1.9 U	1.9 U	1.7 J	1.7 J	1.9 U	1.9 U	3.9	170 J
2,3,7,8-TETRACHLORODIBENZOFURAN	1.1 J	1.9 U	0.84 J	1.4 J	1.9 U	1.9 U	44	190 J
HEPTACHLORODIBENZODIOXIN (TOTAL)	3200 J	140 J	7500 J	4800 J	72 J	100 J	10000 J	1500000 J
HEPTACHLORODIBENZOFURAN (TOTAL)	260 J	14 UJ	850 J	860 J	4.7 UJ	13 J	5000 J	320000 J
HEXACHLORODIBENZODIOXIN (TOTAL)	940 J	51 J	610 J	640 J	11 UJ	21 J	1100 J	180000 J
HEXACHLORODIBENZOFURAN (TOTAL)	130 J	5.7 UJ	450 J	440 J	4.7 UJ	4.8 UJ	1100 J	160000 J
OCTACHLORODIBENZODIOXIN	14000	750	27000	22000	1600	700	51000	10000000
OCTACHLORODIBENZOFURAN	160 J	15 U	420	420 J	9.3 U	13 U	1700	350000
PENTACHLORODIBENZODIOXIN (TOTAL)	140 J	9.3 UJ	74 J	73 J	4.7 UJ	4.8 UJ	220 J	13000 J
PENTACHLORODIBENZOFURAN (TOTAL)	24 UJ	4.7 UJ	87 J	150 J	4.7 UJ	4.8 UJ	270 J	10000 J
TEQ (TOXIC EQUIV. VALUE, FROM I-TEF/89)	66	2.3	99	77	2	1.3	200	27000 J
TETRACHLORODIBENZODIOXIN (TOTAL)	57 J	4.9 UJ	22 J	25 J	1.9 UJ	1.9 U	86 J	4000 J
TETRACHLORODIBENZOFURAN (TOTAL)	1.1 J	1.9 UJ	41 J	53 J	16 UJ	1.9 UJ	380 J	3300 J

TABLE 2-3

SOIL SAMPLING SUMMARY - DIOXINS AND FURANS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP040SLB	GP041SLA	GP041SLB	GP041SLC	GP042SLA	GP042SLB	GP042SLC	GP043SLA
DIOXINS/FURANS								
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	NA	1100000 J	100000	2800	1400	NA	NA	600
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	NA	110000	23000	570	130	NA	NA	49
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	NA	5200	2300	38	13	NA	NA	4.9 U
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	NA	1300	1700	23	11	NA	NA	4
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	NA	3400	330	11	4.8	NA	NA	4.9 U
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	NA	50000	4900	150	53	NA	NA	36
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	NA	1600	150	7.9	6.1	NA	NA	3.6 J
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	NA	4600	1400	27	26	NA	NA	13
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	NA	260	4.7 U	4.8 U	4.6 U	NA	NA	4.9 U
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	NA	1300 J	520	14	4.8	NA.	NA	4.9 U
1,2,3,7,8-PENTACHLORODIBENZOFURAN	NA	510	13	4.8 U	4.6 U	NA	NA	4.9 U
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	NA	3300	85	5.7	4.6 U	NA	NA	4.9 U
2,3,4,7,8-PENTACHLORODIBENZOFURAN	NA	890	16	4.8 U	4.6 U	NA	NA	4.9 U
2,3,7,8-TETRACHLORODIBENZODIOXIN	NA	140	180	4.2	1.9 U	NA	NA	1.9 U
2,3,7,8-TETRACHLORODIBENZOFURAN	NA	460 J	13	1.5 J	0.52 J	NA	NA	0.9 J
HEPTACHLORODIBENZODIOXIN (TOTAL)	NA	1600000 J	200000 J	5600 J	2900 J	NA	NA	1200 J
HEPTACHLORODIBENZOFURAN (TOTAL)	NA	500000 J	110000 J	610 J	460 J	NA	NA	130 J
HEXACHLORODIBENZODIOXIN (TOTAL)	NA	7300 J	19000 J	470 J	360 J	NA	NA	210 J
HEXACHLORODIBENZOFURAN (TOTAL)	NA	13000 J	6500 J	920 J	210 J	NA	NA	120 J
OCTACHLORODIBENZODIOXIN	NA	8100000 J	840000	34000	28000	NA	NA	6300
OCTACHLORODIBENZOFURAN	NA	180000 J	43000	1300	290 J	NA	NA	87 J
PENTACHLORODIBENZODIOXIN (TOTAL)	NA	7700 J	860 J	250 J	48 J	NA	NA	21 J
PENTACHLORODIBENZOFURAN (TOTAL)	NA	620 J	1200 J	83 J	35 J	NA	NA	33 J
TEQ (TOXIC EQUIV. VALUE, FROM I-TEF/89)	NA	28000 J	3400	100	56	NA	NA	19
TETRACHLORODIBENZODIOXIN (TOTAL)	NA	700 J	1800 J	140 J	13 J	NA	NA	20 J
TETRACHLORODIBENZOFURAN (TOTAL)	NA	2400 J	200 J	46 J	0.52 J	NA	NA	0.9 J

TABLE 2-3

SOIL SAMPLING SUMMARY - DIOXINS AND FURANS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP044SLA	GP044SLB	GP045SLA	GP045SLB	GP045SLC	GP046SLA	GP046SLB	GP046SLC
DIOXINS/FURANS								
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	1100	NA	3000	NA	NA	330	2200	34000 J
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	210	NA	340	NA	NA	35 J	300 J	3300 J
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	14	NA	22	NA	NA	4.6 U	20	290
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	12	NA	42	NA	NA	4.6 U	25 J	290 U
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	12	NA	14	NA	NA	4.6 U	24 J	240 J
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	89	NA	190	NA	NA	21 J	140 J	2500 J
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	11	NA	13	NA	NA	4.6 U	18	200
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	35	NA	110	NA	NA	7.7 U	48	630
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	4.6 U	NA	4.6 U	NA	NA	4.6 UR	5.8 UR	9 J
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	9.8	NA	34	NA	NA	4.6 U	13	130
1,2,3,7,8-PENTACHLORODIBENZOFURAN	2.6 J	NA	4 J	NA	NA	2.6 J	21 J	110 J
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	8.8	NA	11	NA	NA	4.6 U	12 J	180 J
2,3,4,7,8-PENTACHLORODIBENZOFURAN	4.6 U	NA	5.8 U	NA	NA	4.6 U	16 J	120 J
2,3,7,8-TETRACHLORODIBENZODIOXIN	1.4 J	NA	20	NA	NA	1.8 U	3.6	16
2,3,7,8-TETRACHLORODIBENZOFURAN	3.4	NA	11	NA	NA	7.2	45	140
HEPTACHLORODIBENZODIOXIN (TOTAL)	2200 J	NA	5100 J	NA	NA	780 J	4500 J	65000 J
HEPTACHLORODIBENZOFURAN (TOTAL)	610 J	NA	1100 J	NA	NA	130 J	990 J	13000 J
HEXACHLORODIBENZODIOXIN (TOTAL)	450 J	NA	1200 J	NA	NA	140 J	740 J	10000 J
HEXACHLORODIBENZOFURAN (TOTAL)	340 J	NA	470 J	NA	NA	100 J	610 J	6500 J
OCTACHLORODIBENZODIOXIN	9400	NA	16000	NA	NA	3900 J	21000	400000 J
OCTACHLORODIBENZOFURAN	460	NA	940 J	NA	NA	77	590 J	8400 J
PENTACHLORODIBENZODIOXIN (TOTAL)	58 J	NA	260 J	NA	NA	15 UJ	90 J	1300 J
PENTACHLORODIBENZOFURAN (TOTAL)	110 J	NA	300 J	NA	NA	41 J	290 J	2100 J
TEQ (TOXIC EQUIV. VALUE, FROM I-TEF/89)	47	NA	130	NA	NA	11 J	97 J	1300 J
TETRACHLORODIBENZODIOXIN (TOTAL)	14 J	NA	190 J	NA	NA	3.9 UJ	39 J	350 J
TETRACHLORODIBENZOFURAN (TOTAL)	59 J	NA	130 J	NA	NA	36 J	300 J	1600 J

TABLE 2-3

SOIL SAMPLING SUMMARY - DIOXINS AND FURANS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP047SLA	GP047SLB	GP048SLA	GP048SLB	GP048SLC	GP049SLA	GP049SLB	GP049SLC
DIOXINS/FURANS								
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	27000	NA	1100 J	30	16	160	350	59
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	3000	NA	66	4.6 U	4.6 U	12	42	6
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	180	NA	5.4 U	4.6 U	9.3 U	8.9 UJ	4.7 U	4.6 U
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	170	NA	12	4.6 U	4.6 U	4.5 U	3.1 J	4.6 U
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	140	NA	4.7 U	4.6 U	4.6 U	4.5 U	4.7 U	4.6 U
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	1700	NA	37	4.6 U	4.6 U	8.8	14	4.6 U
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	170	NA	3.2 J	4.5 U	4.6 U	4.5 U	4.7 U	4.6 U
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	460	NA	24	4.6 U	4.6 U	4.5 U	9.1	4.6 U
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	5 U	NA	4.7 U	4.6 U	4.6 U	4.5 U	4.7 U	4.6 U
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	130	NA	4.7 U	4.6 U	4.6 U	4.5 U	4.7 U	4.6 U
1,2,3,7,8-PENTACHLORODIBENZOFURAN	38	NA	4.7 U	4.6 U	4.6 U	4.5 U	4.7 U	4.6 U
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	150	NA	4.7 U	4.6 U	4.6 U	4.5 U	4.7 U	4.6 U
2,3,4,7,8-PENTACHLORODIBENZOFURAN	56	NA	4.7 U	4.6 U	4.6 U	4.5 U	4.7 U	4.6 U
2,3,7,8-TETRACHLORODIBENZODIOXIN	13	NA	1.9 U	1.8 U	1.9 U	1.8 U	1.9 U	1.9 U
2,3,7,8-TETRACHLORODIBENZOFURAN	46	NA	1.9 U	1.8 U	1.9 J	0.22 J	2.6	0.95 J
HEPTACHLORODIBENZODIOXIN (TOTAL)	54000 J	NA	2500 J	150 J	79 J	310 J	630 J	120 J
HEPTACHLORODIBENZOFURAN (TOTAL)	8700 J	NA	260 J	4.6 UJ	9.3 UJ	37 J	110 J	17 UJ
HEXACHLORODIBENZODIOXIN (TOTAL)	6500 J	NA	290 J	12 UJ	41 J	51 J	90 J	16 UJ
HEXACHLORODIBENZOFURAN (TOTAL)	720 J	NA	100 J	4.6 UJ	4.6 UJ	28 J	52 J	8.8 UJ
OCTACHLORODIBENZODIOXIN	160000	NA	16000	460	650	1500	4300 J	900
OCTACHLORODIBENZOFURAN	3300 J	NA	150	9.2 U	9.3 U	29	100	15 U
PENTACHLORODIBENZODIOXIN (TOTAL)	960 J	NA	23 J	4.6 UJ	5.9 UJ	4.5 UJ	16 UJ	4.6 UJ
PENTACHLORODIBENZOFURAN (TOTAL)	960 J	NA	30 UJ	4.6 UJ	4.6 UJ	21 UJ	41 J	6.7 UJ
TEQ (TOXIC EQUIV. VALUE, FROM I-TEF/89)	860	NA	35 J	0.76	0.81	4.2	11 J	1.6
TETRACHLORODIBENZODIOXIN (TOTAL)	260 J	NA	1.9 UJ	1.8 U	1.9 UJ	2.6 UJ	11 J	7.1 UJ
TETRACHLORODIBENZOFURAN (TOTAL)	860 J	NA	2.2 UJ	1.8 UJ	1.9 UJ	0.22 J	38 J	0.95 J

TABLE 2-3

SOIL SAMPLING SUMMARY - DIOXINS AND FURANS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP050SLA	GP050SLB	GP051SLA	GP051SLB	GP051SLC	GP052SLA	GP052SLB	GP053SLA
DIOXINS/FURANS								
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	450	NA	3900	1300	69	1900 J	NA	930 J
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	27 J	NA	600	150	5.1 U	160 J	NA	170
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	4.4 U	NA	92	19	4.7 U	28 U	NA	14
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	4.4 U	NA	48	11	4.7 U	11 J	NA	26
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	4.4 U	NA	46	15	4.7 U	6.1 J	NA	15
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	45 J	NA	350	75	3.5 J	89 J	NA	84
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	4.4 U	NA	24	7.5	4.7 U	6.8 J	NA	6.7
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	10	NA	100	29	4.7 U	32	NA	21
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	4.4 UR	NA	15 U	4.7 U	4.7 U	5.6 UR	NA	4.8 U
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	4.4 U	NA	31	7.9	4.7 U	6.7 J	NA	5.6
1,2,3,7,8-PENTACHLORODIBENZOFURAN	4.4 UR	NA	6.1	2.8	4.7 U	28 UR	NA	4.8 U
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	3.8 J	NA	17	6.1	4.7 U	5.3 J	NA	8
2,3,4,7,8-PENTACHLORODIBENZOFURAN	4.4 U	NA	11 U	4.7 U	4.7 U	28 U	NA	4.8 U
2,3,7,8-TETRACHLORODIBENZODIOXIN	1.8 U	NA	8.4	2.1	1.9 U	11 U	NA	4 U
2,3,7,8-TETRACHLORODIBENZOFURAN	3.5 U	NA	21	6.8	0.35 J	4.1	NA	1.3 J
HEPTACHLORODIBENZODIOXIN (TOTAL)	980 J	NA	61000 J	1300 J	140 J	3800 J	NA	1900 J
HEPTACHLORODIBENZOFURAN (TOTAL)	84 J	NA	690 J	460 J	14 UJ	520 J	NA	860 J
HEXACHLORODIBENZODIOXIN (TOTAL)	210 J	NA	1500 J	380 J	25 J	530 J	NA	410 J
HEXACHLORODIBENZOFURAN (TOTAL)	90 J	NA	860 J	270 J	7.4 UJ	350 J	NA	330
OCTACHLORODIBENZODIOXIN	3700 J	NA	24000	6400	1100	55000 J	NA	11000
OCTACHLORODIBENZOFURAN	57 U	NA	1300	310	12 U	290 J	NA	320 J
PENTACHLORODIBENZODIOXIN (TOTAL)	17 UJ	NA	200 J	62 J	4.8 U	60 J	NA	30 J
PENTACHLORODIBENZOFURAN (TOTAL)	39 J	NA	350 J	80 J	4.7 UJ	47 J	NA	38 J
TEQ (TOXIC EQUIV. VALUE, FROM I-TEF/89)	14 J	NA	160	43	2.2	95 J	NA	42 J
TETRACHLORODIBENZODIOXIN (TOTAL)	9.3 J	NA	39 J	58 J	1.9 UJ	8 J	NA	4 UJ
TETRACHLORODIBENZOFURAN (TOTAL)	23 J	NA	150 J	76 J	0.35 J	50 J	NA	1.3 J

TABLE 2-3

SOIL SAMPLING SUMMARY - DIOXINS AND FURANS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP053SLB	GP053SLC	GP054SLA	GP054SLB	GP054SLC	GP055SLA	GP055SLB	GP056SLA
DIOXINS/FURANS								
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	*210*	8.1 U	*960*	NA	NA	NA	NA	*81*
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	*55*	4.6 U	*80 J*	NA	NA	NA	NA	4.8 U
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	4.9 U	4.6 U	9.9 U	NA	NA	NA	NA	4.8 U
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	4.9 U	4.6 U	*11 J*	NA	NA	NA	NA	4.8 U
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	4.9 U	4.6 U	9.9 U	NA	NA	NA	NA	4.8 U
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	*7.1*	4.6 U	*63 J*	NA	NA	NA	NA	*7.9*
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	4.9 U	4.6 U	9.9 U	NA	NA	NA	NA	4.8 U
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	*5.3*	4.6 U	*28*	NA	NA	NA	NA	4.8 U
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	4.9 U	4.6 U	5 UR	NA	NA	NA	NA	4.8 U
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	4.9 U	4.6 U	*6.2 J*	NA	NA	NA	NA	4.8 U
1,2,3,7,8-PENTACHLORODIBENZOFURAN	4.9 U	4.6 U	*1.4 J*	NA	NA	NA	NA	4.8 U
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	4.9 U	4.6 U	*4.7 J*	NA	NA	NA	NA	4.8 U
2,3,4,7,8-PENTACHLORODIBENZOFURAN	4.9 U	4.6 U	9.9 U	NA	NA	NA	NA	4.8 U
2,3,7,8-TETRACHLORODIBENZODIOXIN	2 U	1.9 U	*0.65 J*	NA	NA	NA	NA	1.9 U
2,3,7,8-TETRACHLORODIBENZOFURAN	*0.42 J*	1.9 U	*1.5 J*	NA	NA	NA	NA	*0.16 J*
HEPTACHLORODIBENZODIOXIN (TOTAL)	*640 J*	*39 J*	*2100 J*	NA	NA	NA	NA	*140 J*
HEPTACHLORODIBENZOFURAN (TOTAL)	*120 J*	4.6 UJ	*240 J*	NA	NA	NA	NA	8.4 UJ
HEXACHLORODIBENZODIOXIN (TOTAL)	*71 J*	16 UJ	*430 J*	NA	NA	NA	NA	*51 J*
HEXACHLORODIBENZOFURAN (TOTAL)	*42 J*	4.6 UJ	*220 J*	NA	NA	NA	NA	9.7 UJ
OCTACHLORODIBENZODIOXIN	*3900*	*340 J*	*14000*	NA	NA	NA	NA	*530*
OCTACHLORODIBENZOFURAN	*82 J*	9.3 U	*110 J*	NA	NA	NA	NA	4.2 U
PENTACHLORODIBENZODIOXIN (TOTAL)	6.4 UJ	4.6 UJ	*30 J*	NA	NA	NA	NA	11 UJ
PENTACHLORODIBENZOFURAN (TOTAL)	6.3 UJ	4.6 UJ	*74 J*	NA	NA	NA	NA	4.8 UJ
TEQ (TOXIC EQUIV. VALUE, FROM I-TEF/89)	*7.9*	*0.34 J*	*39 J*	NA	NA	NA	NA	*2.1*
TETRACHLORODIBENZODIOXIN (TOTAL)	3 UJ	*9.1 J*	*12 J*	NA	NA	NA	NA	5.2 UJ
TETRACHLORODIBENZOFURAN (TOTAL)	*0.42 J*	1.9 UJ	*39 J*	NA	NA	NA	NA	*0.16 J*

TABLE 2-3

SOIL SAMPLING SUMMARY - DIOXINS AND FURANS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP201SLA	GP201SLA (Duplicate)	GP202SLA	GP202SLA (Resample)	GP203SLA	GP204SLA	GP205SLA	GP206SLA
<u>DIOXINS/FURANS</u>								
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	*170*	*110*	*91*	NA	*110*	*180 J*	*540*	*360*
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	*11 J*	4.8 U	6.4 U	NA	8.9 U	9.9 U	*17 J*	4.8 U
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	12 U	4.8 U	4.9 U	NA	4.6 U	4.9 U	4.7 U	4.8 U
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	12 U	4.8 U	4.9 U	NA	4.6 U	4.9 U	6.2 U	4.8 U
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	12 U	4.8 U	4.9 U	NA	4.6 U	4.9 U	4.7 U	4.8 U
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	6.6 J	4.8 U	4.9 U	NA	4.8 U	4.9 U	*13 J*	6.3 U
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	12 U	4.8 U	4.9 U	NA	4.6 U	4.9 U	4.7 U	4.8 U
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	*7.8*	4.8 U	4.9 U	NA	4.6 U	4.9 U	*11*	*6.9*
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	12 UR	4.8 UR	4.9 UR	NA	4.6 UR	4.9 UR	4.7 UR	4.8 UR
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	12 U	4.8 U	4.9 U	NA	*10*	4.9 U	4.7 U	4.8 U
1,2,3,7,8-PENTACHLORODIBENZOFURAN	12 UR	4.8 UR	4.9 UR	NA	4.6 UR	4.9 UR	4.7 UR	4.8 UR
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	12 U	4.8 U	4.9 U	NA	4.6 U	4.9 U	4.7 U	4.8 U
2,3,4,7,8-PENTACHLORODIBENZOFURAN	12 U	4.8 U	4.9 U	NA	4.6 U	4.9 J	4.7 U	4.8 U
2,3,7,8-TETRACHLORODIBENZODIOXIN	4.9 U	1.9 U	1.9 U	NA	*0.21 J*	*0.21 J*	*0.58 J*	1.9 U
2,3,7,8-TETRACHLORODIBENZOFURAN	2 U	1.9 U	1.9 U	NA	1.9 U	2 U	1.9 U	1.9 U
HEPTACHLORODIBENZODIOXIN (TOTAL)	*380 J*	*250 J*	*210 J*	NA	*260 J*	*450 J*	*1200 J*	*790 J*
HEPTACHLORODIBENZOFURAN (TOTAL)	*30 J*	12 UJ	17 UJ	NA	27 UJ	*34 J*	*52 J*	11 UJ
HEXACHLORODIBENZODIOXIN (TOTAL)	*59 J*	*30 J*	*33 J*	NA	*40 J*	*53 J*	*130 J*	*88 J*
HEXACHLORODIBENZOFURAN (TOTAL)	17 UJ	7.8 UJ	12 UJ	NA	15 UJ	15 UJ	20 UJ	7.5 UJ
OCTACHLORODIBENZODIOXIN	*3500 J*	*4100 J*	*1400*	NA	*2000 J*	*7600 J*	*27000*	*26000*
OCTACHLORODIBENZOFURAN	24 U	9.5 U	12 U	NA	22 U	22 U	*66*	26 U
PENTACHLORODIBENZODIOXIN (TOTAL)	12 UJ	5 UJ	4.9 UJ	NA	87 J	4.9 UJ	19 UJ	8 UJ
PENTACHLORODIBENZOFURAN (TOTAL)	12 UJ	4.8 UJ	6.7 UJ	NA	4.6 UJ	4.9 UJ	9.2 J	4.8 UJ
TEQ (TOXIC EQUIV. VALUE, FROM I-TEF/89)	*6.8 J*	*5.2 J*	*2.3*	NA	*8.3 J*	*12 J*	*36*	*30*
TETRACHLORODIBENZODIOXIN (TOTAL)	4.9 UJ	2.3 UJ	2.2 UJ	NA	*0.21 J*	*0.21 J*	*12 J*	2.3 UJ
TETRACHLORODIBENZOFURAN (TOTAL)	*9.2 J*	*5 J*	*9 J*	NA	*5.9 J*	*10 J*	*17 J*	*3.9 J*

TABLE 2-3

SOIL SAMPLING SUMMARY - DIOXINS AND FURANS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP207SLA	GP208SLA	GP209SLA	GP210SLA	GP211SLA	GP212SLA	GP213SLA	GP214SLA
DIOXINS/FURANS								
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	400	320	320	310	200	320	39	170
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	14 J	11 J	47 J	6.3 U	5.9 U	18 J	4.8 U	5.1 U
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	2.4 U	4.7 U	4.8 U	4.7 U	4.9 U	4.7 U	4.8 U	4.9 U
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	3.2 U	4.7 U	5.3 U	4.7 U	4.9 U	4.7 U	4.8 U	4.9 U
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	2.4 U	4.7 U	4.8 U	4.7 U	4.9 U	4.7 U	4.8 U	4.9 U
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	7.1 J	5.7 U	10 J	4.7 U	4.9 U	5.1 U	4.8 U	4.9 U
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	2.4 U	4.7 U	4.8 U	4.7 U	4.9 U	4.7 U	4.8 U	4.9 U
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	12	7.6	9.4	4.7 U	4.9 U	5.6 U	4.8 U	4.9 U
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	2.4 UR	4.7 UR	4.8 UR	4.7 UR	4.9 UR	4.7 UR	4.8 UR	4.9 UR
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	2.4 U	4.7 U	4.8 U	4.7 U	4.9 U	4.7 U	4.8 U	4.9 U
1,2,3,7,8-PENTACHLORODIBENZOFURAN	2.4 UR	4.7 UR	4.8 UR	4.7 UR	4.9 UR	4.7 UR	4.8 UR	4.9 UR
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	2.4 U	4.7 U	4.8 U	4.7 U	4.9 U	4.7 U	4.8 U	4.9 U
2,3,4,7,8-PENTACHLORODIBENZOFURAN	3.4 U	4.7 U	4.8 U	4.7 U	4.9 U	4.7 U	4.8 U	4.9 U
2,3,7,8-TETRACHLORODIBENZODIOXIN	1 U	1.9 U	8.1	0.11 J	0.13 J	0.69 J	1.9 U	1.9 U
2,3,7,8-TETRACHLORODIBENZOFURAN	3.2 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
HEPTACHLORODIBENZODIOXIN (TOTAL)	400 J	740 J	650 J	310 J	450 J	1200 J	89 J	530 J
HEPTACHLORODIBENZOFURAN (TOTAL)	40 J	33 J	130 J	14 UJ	13 UJ	73 J	7.9 UJ	15 UJ
HEXACHLORODIBENZODIOXIN (TOTAL)	87 J	83 J	99 J	32 J	53 J	88 J	14 UJ	59 J
HEXACHLORODIBENZOFURAN (TOTAL)	18 UJ	12 UJ	49 J	4.7 UJ	6.5 UJ	19 UJ	4.8 UJ	7.8 UJ
OCTACHLORODIBENZODIOXIN	11000 J	15000 J	9000 J	12000 J	13000	8200	820	11000 J
OCTACHLORODIBENZOFURAN	39 U	36 U	150	16 U	14 U	100	9.6 U	15 U
PENTACHLORODIBENZODIOXIN (TOTAL)	11 UJ	14 UJ	19 UJ	4.7 UJ	6.9 UJ	9 UJ	4.8 UJ	4.9 UJ
PENTACHLORODIBENZOFURAN (TOTAL)	18 J	5.6 J	5.9 UJ	4.7 UJ	4.9 UJ	4.7 UJ	4.8 UJ	4.9 UJ
TEQ (TOXIC EQUIV. VALUE, FROM I-TEF/89)	17 J	19 J	23 J	15 J	15	12	1.2	13 J
TETRACHLORODIBENZODIOXIN (TOTAL)	3.4 UJ	6.5 UJ	15 J	0.11 J	0.13 J	0.69 J	1.9 UJ	1.9 UJ
TETRACHLORODIBENZOFURAN (TOTAL)	14 J	8.5 J	5 J	1.9 UJ	6.1 J	4.8 J	3.1 UJ	8 J

TABLE 2-4

SOIL SAMPLING SUMMARY - INORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP001SLA	GP001SLB (Duplicate)	GP002SLA	GP002SLB	GP003SLA	GP003SLB	GP004SLA	GP004SLB
ALUMINUM	1600 J	3300 J	2300	3100	6500 J	16000 J	1800	520
ANTIMONY	0.64 UR	0.67 UR	1.1 U	1.1 U	0.79 UR	0.7 UR	1.4 U	1.1 U
ARSENIC	16	56	2.1 J	36	58	4.7	3.2	0.89 U
BARIUM	15	20	180	41	40	38	21	2.6
BERYLLIUM	0.11 J	0.12 J	0.21 U	0.23 U	0.13 J	0.26 J	0.27 U	0.22 U
CADMIUM	0.16 U	0.16 U	0.64 J	0.23 U	0.19 U	0.17 U	0.27 U	0.22 U
CALCIUM	1700	1100	16000	2600	2700	1400	1300	210
CHROMIUM	2.2	4.5	5	4.3	6.6	20	2.9	1.3 J
COBALT	1.4 J	0.81 J	1.9 J	1.4 J	3.9 J	2 J	1.3 J	0.44 U
COPPER	9 J	0.43 UJ	9.9	6.8	4 UJ	9 J	18	2.3 J
IRON	3300 J	3400 J	3200	4000	10000 J	19000 J	3000	490
LEAD	8.6 J	43 J	26 J	13 J	9.9 J	12 J	9.4 J	1.4 J
MAGNESIUM	460	240	340	260	1600	580	470	54
MANGANESE	72	44	380	66	250	38	75	2.5 J
NICKEL	1.4 J	1.3 J	3 U	3 U	3.7 J	4.2 J	3 U	1 U
POTASSIUM	410	310	190 J	180 J	1500	460	350 J	18 J
SELENIUM	0.66 U	0.69 U	1.1 U	1.1 U	0.81 U	0.72 U	1.4 U	1.1 U
SILVER	0.26 U	0.27 U	0.43 U	0.46 U	0.32 U	0.28 U	0.54 U	0.44 U
SODIUM	70 U	70 U	100 U	110 U	80 U	70 U	90 U	60 U
TOTAL MERCURY	0.05 U	0.05 U	0.11 U	0.12 U	0.06 U	0.1 U	0.13 U	0.11 U
VANADIUM	4.1 J	4.3 J	7.4 J	110 U	14	34	5.4 J	1.5 J
ZINC	14 J	54 J	47 J	42 J	29 J	15 J	25 J	7.4 J

Data Qualifiers:

U = Material was analyzed but not detected. The number is the minimum quantitation limit.

NA = Not analyzed.

J = Estimated value

Concentrations presented in mg/kg

TABLE 2-4

SOIL SAMPLING SUMMARY - INORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP005SLA	GP005SLB	GP006SLA	GP006SLB	GP007SLA	GP007SLA (Duplicate)	GP007SLB	GP007SLB (Duplicate)
ALUMINUM	2700 J	2800	2000	6000	3200	2800	740	1200
ANTIMONY	0.76 UR	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.2 U	1.2 U
ARSENIC	8.7 J	0.86 U	2 U	12	1 U	1.1 J	0.97 U	0.94 U
BARIUM	20	14	25	37	32	30	8.2	14
BERYLLIUM	0.08 J	0.21 U	0.22 U	1 U	0.22 U	0.22 U	0.24 U	0.23 U
CADMIUM	0.18 U	0.21 U	0.22 U	0.22 U	0.22 U	0.22 U	0.24 U	0.23 U
CALCIUM	1100	1200	2000	1700	2100	1900	240	280
CHROMIUM	2.6	7	3.4	8.5	5.1	4.5	1.5 J	1.8 J
COBALT	0.77 U	2 J	1.1 J	1.1 J	1.1 J	1.1 J	0.48 U	0.52 J
COPPER	6.1 J	9.4	3.9 J	5.2 J	4.2 J	4.5 J	2.2 J	2.7 J
IRON	3600 J	4900	2700	7600	3600	2700	300	440
LEAD	7 J	5.2 J	7 J	15 J	17 J	19 J	1.4 J	1.4 J
MAGNESIUM	500	1000	270	310	330	300	64	84
MANGANESE	67	120	81	78	87	79	3.1 J	4.8
NICKEL	0.85 J	6 U	2 U	3 U	2 U	2 U	1 U	1 U
POTASSIUM	760	800 J	200 J	190 J	200 J	170 J	25 J	37 J
SELENIUM	0.75 U	1.1 U	1.1 U	1.3 J	1.1 U	1.1 U	1.2 U	1.2 U
SILVER	0.31 U	0.43 U	0.45 U	0.45 U	0.43 U	0.44 U	0.48 U	0.47 U
SODIUM	80 U	100 U	80 U	100 U	80 U	80 U	70 U	50 U
TOTAL MERCURY	0.1 U	0.1 U	0.1 U	0.11 U	0.1 U	0.11 U	0.12 U	0.11 U
VANADIUM	5.8 J	23	5.7 J	14	9.9 J	7.7 J	1 J	1 J
ZINC	18 J	19	17 J	19 J	19 J	18 J	4.6 J	4.3 J

TABLE 2-4

SOIL SAMPLING SUMMARY - INORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP008SLA	GP008SLB	GP009SLA	GP009SLB	GP010SLA	GP010SLB	GP011SLA	GP012SLA
ALUMINUM	2900	2500	1300	1200	8100 J	4300 J	3300	3200
ANTIMONY	1.1 U	1.3 U	1 U	1.6 U	0.67 UR	0.67 UR	1.1 U	1.1 U
ARSENIC	5.8	20	0.83 U	1.3 U	2 J	2 J	0.84 U	0.85 U
BARIUM	33	55	8.2	50	25	25	21	21
BERYLLIUM	0.22 U	0.26 U	0.21 U	0.33 U	0.17 J	0.19 J	0.21 U	0.21 U
CADMIUM	0.22 U	0.26 U	0.21 U	0.33 U	0.16 U	0.16 U	0.21 U	0.21 U
CALCIUM	8000	3500	520	3400	2700	600	1800	1600
CHROMIUM	5.4	3.3	2.3	2.4 J	13	3.6	3.4	4.2
COBALT	1.8 J	1.5 J	1.2 J	0.98 J	0.72 U	0.76 U	2.9 J	2.7 J
COPPER	6.7	8.2	2.8 J	5.6 J	5 J	2 UJ	7.5	5.3
IRON	5300	2500	2500	2000	9900 J	2400 J	7400	6700
LEAD	17 J	14 J	2.9 J	5.6 J	42 J	5.5 J	6.4 J	6.5 J
MAGNESIUM	650	290	490	570	540	180	1700	1400
MANGANESE	100	100	59	64	52	32	210	180
NICKEL	3 U	3 U	2 U	2 U	2.9 J	0.74 U	4 U	4 U
POTASSIUM	390 J	160 J	370 J	270 J	410	120	1600 J	1300 J
SELENIUM	1.1 U	1.3 U	1 U	1.6 U	0.7 U	0.74 U	1.1 U	1.1 U
SILVER	0.44 U	0.53 U	0.42 U	0.65 U	0.27 U	0.27 U	0.42 U	0.43 U
SODIUM	120 U	100 U	80 U	110 U	70 U	70 U	120 U	110 U
TOTAL MERCURY	0.11 U	0.13 U	0.1 U	0.17 U	0.1 U	0.05 U	0.11 U	0.1 U
VANADIUM	11 J	5.3 J	4.9 J	2.8 J	17	4.8 J	12	17
ZINC	23 J	20 J	10 J	26 J	26 J	9.1 J	27	28

TABLE 2-4

SOIL SAMPLING SUMMARY - INORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP013SLA	GP013SLB	GP015SLA	GP015SLB	GP016SLA	GP016SLB	GP017SLA	GP017SLA (Duplicate)
ALUMINUM	4900	4000	2800	2500	2500	2700	4000 J	4300 J
ANTIMONY	1.1 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	0.66 UR	0.57 UR
ARSENIC	2.1 U	4.5	14	0.92 U	3.1	0.89 J	11	21
BARIUM	31	27	69	23	54	26	46	83
BERYLLIUM	1 U	1 U	1 U	0.23 U	1 U	1 U	0.13 J	0.13 J
CADMIUM	0.23 U	0.22 U	0.23	0.23 U	0.22 U	0.21 U	0.16 U	0.14 U
CALCIUM	1300	900	11000	490	6100	580	3200	5200
CHROMIUM	7.5	5.7	5.1	3.6	4.4	2.8	5.6	7.8
COBALT	1.7 J	1.1 J	16	1.1 J	1.8 J	0.78 J	2.4 J	3.1 J
COPPER	4.8 J	3.5 J	15	6.9	16	5.2 J	11 J	19 J
IRON	6900	4600	4800	5500	5100	2500	6100 J	7000 J
LEAD	18 J	12 J	28 J	13 J	26 J	3.2 J	39 J	90 J
MAGNESIUM	710	400	800	220	680	190	920	980
MANGANESE	100	56	220	50	150	79	170	250
NICKEL	3 U	3 U	7 U	2 U	3 U	2 U	4.1 J	5.7 J
POTASSIUM	540 J	240 J	620 J	180 J	350 J	120 J	1100	910
SELENIUM	1.1 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	0.68 U	0.59 U
SILVER	0.45 U	0.43 U	0.45 U	0.46 U	0.43 U	0.42 U	0.27 U	0.23 U
SODIUM	90 U	80 U	150 U	90 U	130 U	70 U	70 U	60 U
TOTAL MERCURY	0.1 U	0.11 U	0.11 U	0.12 U	0.1 U	0.11 U	0.05 U	0.05 U
VANADIUM	17	12	7.6 J	5.7 J	7.3 J	4.6 J	8.7 J	7.8 J
ZINC	24	20	34 U	18	54	8.6	37 J	69 J

TABLE 2-4

SOIL SAMPLING SUMMARY - INORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP017SLB	GP017SLB (Duplicate)	GP018SLA	GP018SLA (Duplicate)	GP019SLA	GP019SLB	GP020SLA	GP020SLB
ALUMINUM	8400 J	7000 J	6600	3700	4000 J	2100 J	3300	5300
ANTIMONY	0.61 UR	1 UJ	1.1 U	1 U	0.74 UR	0.72 UR	1.1 U	1.2 U
ARSENIC	2.5	2.3	2 U	1.3 J	5.3	0.96 U	2 U	3 U
BARIUM	72	62	26	22	40	16	16	31
BERYLLIUM	0.33 J	0.27 J	0.21 U	0.21 U	0.15 J	0.15 J	0.22 U	0.24 U
CADMIUM	0.15 U	0.2 U	0.21 U	0.21 U	0.18 U	0.18 U	0.22 U	0.24 U
CALCIUM	2500	2300	11000	1600	2200	320	4100	890
CHROMIUM	8.7	7.9	7.1	4.6	5.9	2.7	4.8	9
COBALT	2.7 J	2.3 J	6 J	3.1 J	2.7 J	0.99 J	0.72 J	0.47 U
COPPER	6.4 J	5 UJ	20	6.9	7.5 J	0.47 UJ	8.3	3.2 J
IRON	7500 J	8100 J	12000	6800	6200 J	2000 J	4100	10000
LEAD	19 J	17 J	5.3 J	5.1 J	15 J	1.9 J	8.3 J	11 J
MAGNESIUM	570	430	5100	1600	1200	130	360	190
MANGANESE	170	190	450	170	130	16	42	8.1
NICKEL	3.5 J	3.7 J	14	4 U	4.7 J	1 UJ	2 U	2 U
POTASSIUM	410	330	990 J	1100 J	940	80 U	250 J	170 J
SELENIUM	0.62 U	0.83 U	1.1 U	1 U	0.76 U	0.74 U	1.1 U	1.2 U
SILVER	0.25 U	0.33 U	0.42 U	0.42 U	0.3 U	0.29 U	0.44 U	0.47 U
SODIUM	60 U	80 U	350	140 U	80 U	80 U	70 U	110 U
TOTAL MERCURY	0.05 U	0.2 U	0.1 U	0.11 U	0.05 U	0.06 U	0.11 U	0.11 U
VANADIUM	13	11 J	14	12	8.2 J	2.6 J	10 J	18
ZINC	18 J	13 J	28	27	32 J	2.7 J	13 13	7.7

TABLE 2-4

SOIL SAMPLING SUMMARY - INORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP021SLA	GP021SLB	GP022SLA	GP022SLB	GP023SLA	GP023SLB	GP024SLA	GP024SLB
ALUMINUM	5400	2500	3200 J	7900 J	3400 J	2600 J	4200	3000
ANTIMONY	1.2 U	2 U	0.76 UR	0.65 UR	0.75 UR	0.77 UR	2 U	1.3 U
ARSENIC	17	14	2 U	1.3 J	1.9 J	4.2	7.2	3.2
BARIUM	57	33	31	38	200	130	230	39
BERYLLIUM	1 U	0.21 U	0.5 J	0.43 J	0.08 U	0.08 U	1 U	0.26 U
CADMIUM	0.23 U	0.21 U	0.18 U	0.16 U	0.18 U	0.19 U	0.27 U	0.26 U
CALCIUM	2000	1200	2200	1300	29000	54000	23000	44000
CHROMIUM	9.3	3.1	5.6	14	8	5.6	6	6.6
COBALT	1.6 J	0.8 J	1.2 J	1.6 J	2.5 J	2.1 J	2.9 J	1.6 J
COPPER	6.4	2.7 J	1 UJ	4 UJ	7.7 J	5.9 J	20	12
IRON	8200	2600	5200 J	8700 J	4800 J	4200 J	4900	5500
LEAD	23 J	3.3 J	14 J	17 J	11 J	9 J	28 J	21 J
MAGNESIUM	430	150	320	370	580	1400	970	880
MANGANESE	92	39	21	21	410	250	370	96
NICKEL	3 U	2 U	0.74 J	1.9 J	3.4 J	4.2 J	5 U	3 U
POTASSIUM	230 J	55 J	80 U	150	340	550	1300 J	250 J
SELENIUM	1.2 U	1 U	0.78 U	0.67 U	0.77 U	0.79 U	1.3 U	1.3 U
SILVER	0.46 U	0.41 U	0.31 U	0.26 U	0.3 U	0.31 U	0.54 U	0.53 U
SODIUM	130 U	50 U	80 U	70 U	80 U	80 U	450	180 U
TOTAL MERCURY	0.12 U	0.1 U	0.06 U	0.06 U	0.06 U	0.07 U	0.14 U	0.13 U
VANADIUM	15	5.2 J	12	28	8 J	3 J	9.1 J	7.2 J
ZINC	25	7.9	8.2 J	12 J	47 J	28 J	52 J	47 J

TABLE 2-4

SOIL SAMPLING SUMMARY - INORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP025SLA	GP025SLB	GP025SLC	GP026SLA	GP026SLB	GP026SLC	GP027SLA	GP027SLB
ALUMINUM	3100	3700	9400	2800	13000	2300	3600	2500
ANTIMONY	1.1 U	1.1 U	1.2 U	1.1 U	3 U	1 U	1.1 U	1 U
ARSENIC	11	2 U	3.7	3.7	7.7	0.84 U	2 U	1.6 J
BARIUM	66	60	34	45	1500	44	33	36
BERYLLIUM	1 U	1 U	1 U	1 U	2.5	0.21 U	1 U	1 U
CADMIUM	0.21 U	0.21 U	0.23 U	0.22 U	0.3 U	0.21 U	0.22 U	0.2 U
CALCIUM	6500	2700	950	6100	110000	2100	3200	1000
CHROMIUM	6.1	3.3	9.1	4.7	8.8	3.7	5.1	2.3
COBALT	1.8 J	1 J	2.7 J	2.1 J	24	0.97 J	2.3 J	0.69 J
COPPER	16	3.3 J	3.2 J	8.3	64	3.3 J	7.1	2.3 J
IRON	5200	3600	12000	5200	7400	2600	6300	2600
LEAD	22 J	8.8 J	5 J	18 J	43 J	3 J	15 J	6.1 J
MAGNESIUM	600	410	470	990	7100	220	1200	300
MANGANESE	170	59	84	170	3400	100	150	120
NICKEL	3 U	2 U	5 U	3 U	15	2 U	3 U	2 U
POTASSIUM	350 J	350 J	360 J	610 J	3900 J	130 J	970 J	210 J
SELENIUM	1.1 U	1.1 U	1.2 U	1.1 U	1.5 U	1 U	1.1 U	1 U
SILVER	0.43 U	0.43 U	1 U	1 U	0.61 U	2 U	0.43 U	0.41 U
SODIUM	100 U	130 U	90 U	120 U	820	80 U	140 U	200 U
TOTAL MERCURY	0.11 U	0.11 U	0.12 U	0.11 U	0.15 U	0.11 U	0.11 U	0.1 U
VANADIUM	6.5 J	5.3 J	19	7.4 J	21	4.4 J	12	5 J
ZINC	72	14	13	38	31	6.2	32	7.2

TABLE 2-4

SOIL SAMPLING SUMMARY - INORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP027SLC	GP028SLA	GP028SLB	GP028SLC	GP029SLA	GP029SLB	GP029SLC	GP030SLA
ALUMINUM	*3600*	*3300*	*7000*	*2200*	*3900 J*	*6100 J*	*7400 J*	*4100*
ANTIMONY	1.1 U	1.1 U	1.2 U	1 U	0.61 UR	0.72 UR	0.55 UR	1.1 U
ARSENIC	0.87 U	*0.94 J*	3 U	0.82 U	2 UJ	*1 J*	2 UJ	2 U
BARIUM	*25*	*21*	*35*	*15*	*16*	*42*	*81*	*20*
BERYLLIUM	1 U	1 U	1 U	1 U	*0.12 J*	*0.36 J*	*0.21 J*	0.22 U
CADMIUM	0.22 U	0.21 U	0.23 U	0.21 U	0.15 U	0.18 U	0.13 U	0.22 U
CALCIUM	*1300*	*3700*	*1500*	*370*	*1100*	*1900*	*19000*	*2300*
CHROMIUM	*3.8*	*5.5*	*11*	*2.7*	*4.5*	*8.7*	*14*	*6.2*
COBALT	*1 J*	*1.3 J*	*1 J*	*0.65 J*	0.66 U	0.83 U	0.83 U	*2.6 J*
COPPER	*1.8 J*	*4 J*	*3 J*	*1 J*	2 UJ	4 UJ	*47 J*	*6.8*
IRON	*3600*	*4800*	*10000*	*2400*	*4000 J*	*3200 J*	*2400 J*	*6100*
LEAD	*4.2 J*	*22 J*	*12 J*	*2.9 J*	*6.6 J*	*17 J*	*92 J*	*5.7 J*
MAGNESIUM	*280*	*570*	*360*	*130*	*890*	*300*	*1700*	*1200*
MANGANESE	*56*	*67*	*36*	*18*	*91*	*17*	*57*	*130*
NICKEL	3 U	3 U	3 U	2 U	*0.65 J*	0.81 UJ	0.81 UJ	9 U
POTASSIUM	*160 J*	*400 J*	*370 J*	*54 J*	*850*	*120*	*200*	*1000 J*
SELENIUM	1.1 U	1.1 U	1.2 U	1 U	0.64 U	0.81 U	0.81 U	1.1 U
SILVER	0.43 U	0.42 U	0.46 U	1 U	0.25 U	0.29 U	0.22 U	0.44 U
SODIUM	140 U	90 U	110 U	70 U	60 U	80 U	60 U	130 U
TOTAL MERCURY	0.11 U	0.11 U	0.12 U	0.11 U	0.05 U	0.1 U	0.1 U	0.11 U
VANADIUM	*6.6 J*	*13*	*23*	*4.8 J*	*14*	*15*	*15*	*19*
ZINC	*7.5*	*21*	*13*	*5.7*	*12 J*	*6.9 J*	*91 J*	*25*

TABLE 2-4

SOIL SAMPLING SUMMARY - INORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP030SLB	GP030SLC	GP031SLA	GP031SLB	GP032SLA	GP033SLA	GP034SLA	GP034SLB
ALUMINUM	4100	4000	3900	5200	3500	3000	3100	3100
ANTIMONY	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
ARSENIC	2 U	29	2.1	1.1 J	12	13	14	2.5
BARIUM	16	88	17	22	81	41	22	44
BERYLLIUM	0.21 U	0.22 U	1 U	1 U	1 U	1 U	0.21 U	0.21 U
CADMIUM	0.21 U	0.22 U	0.21 U	0.22 U	0.23 U	0.3 J	0.21 U	0.21 U
CALCIUM	4100	9500	14000	450	11000	11000	1800	1700
CHROMIUM	6.4	6.8	3.9	4.4	16	8.4	5.3	5.3
COBALT	0.89 J	1.9 J	1.8 J	0.99 J	3.2 J	1.8 J	1.5 J	1.4 J
COPPER	2.7 J	36	5.7	1.6 J	32	19	8	9.2
IRON	5200	4900	4800	3700	6600	5900	4300	3500
LEAD	12 J	36 J	5.3 J	3.4 J	37 J	29 J	20 J	16 J
MAGNESIUM	500	780	890	180	720	910	520	290
MANGANESE	46	170	90	13	190	150	110	71
NICKEL	3 U	5 U	3 U	2 U	16	3 U	3 U	3 U
POTASSIUM	1200 J	1200 J	590 J	140 J	360 J	460 J	330 J	130 J
SELENIUM	1.1 U	1.1 U	1.1 U	1.1 U	1.6	1.1 U	1.1 U	1.1 U
SILVER	210	200	1 U	0.45 U	1 U	2 U	0.43 U	0.43 U
SODIUM	100 U	160 U	100 U	70 U	120 U	140 U	90 U	100 U
TOTAL MERCURY	0.1 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.1 U
VANADIUM	13	8.4 J	7.6 J	7.3 J	7.5 J	7.5 J	8.9 J	6.4 J
ZINC	17	45	18	8.1	15	54	21	29

TABLE 2-4

SOIL SAMPLING SUMMARY - INORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP034SLC	GP035SLA	GP035SLB	GP035SLC	GP036SLA	GP036SLB	GP036SLC	GP037SLA
ALUMINUM	3600	6300	5400	6100	2600	4700	3600	3800
ANTIMONY	1.2 U	1.2 U	1.2 U	1.2 U	1 U	1.1 U	1.1 U	2 U
ARSENIC	0.94 U	9	21	13	5	3.1	2 U	1.6 J
BARIUM	260	35	150	340	17	34	32	40
BERYLLIUM	1 U	0.23 U	0.23 U	0.23 U	0.21 U	1 U	1 U	1 U
CADMIUM	0.23 U	0.23 U	0.23 U	0.23 U	0.21 U	0.23 U	0.22 U	0.34 J
CALCIUM	510	2500	13000	28000	4500	2300	1800	3700
CHROMIUM	5.3	8.5	7.6	8.7	3.6	7.4	3.8	7.4
COBALT	1.2 J	1.5 J	3.4 J	5.1 J	1.4 J	1.2 J	0.86 J	3.3 J
COPPER	2.5 J	4.8 J	17	20	3.3 J	5 J	3.2 J	42
IRON	3000	6100	6700	6300	4000	5800	3200	9700
LEAD	11 J	16 J	33 J	34 J	8.3 J	10 J	5.6 J	50 J
MAGNESIUM	220	560	1400	2700	640	450	230	1900
MANGANESE	44	63	380	760	87	73	93	230
NICKEL	2 U	3 U	5 U	8 U	3 U	3 U	2 U	7 U
POTASSIUM	130 J	1700 J	2100 J	3500 J	510 J	340 J	130 J	1100 J
SELENIUM	1.2 U	1.4 J	1.2 U	1.2 U	1 U	1.1 U	1.1 U	1.1 U
SILVER	0.47 U	250	270	250	0.42 U	0.46 U	0.44 U	0.44 U
SODIUM	100 U	100	190 U	470	80 U	90 U	100 U	130 U
TOTAL MERCURY	0.12 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.1 U	0.11 U
VANADIUM	6.6 J	17	13	12	16	13	6 J	11
ZINC	100	25	170	73	15	24	11	150

TABLE 2-4

SOIL SAMPLING SUMMARY - INORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP037SLB	GP037SLC	GP038SLA	GP038SLA (Duplicate)	GP038SLB	GP038SLC	GP039SLA	GP040SLA
ALUMINUM	*4300*	*4800*	*2900*	*3800*	*3700*	*3300*	*7100*	*3700 J*
ANTIMONY	1.1 U	1.1 U	2 U	1.1 U	1.1 U	1.1 U	4 U	2 UJ
ARSENIC	0.89 U	*1.3 J*	*12*	*11*	*1.5 J*	0.89 U	*50*	*3.2*
BARIUM	*83*	*35*	*76*	*82*	*33*	*23*	*290*	*110*
BERYLLIUM	1 U	1 U	1 U	1 U	1 U	1 U	1 U	*0.11 J*
CADMIUM	0.22 U	0.21 U	0.23 U	0.23 U	0.22 U	0.22 U	*1.2 J*	0.16 U
CALCIUM	*5800*	*1600*	*12000*	*9100*	*1200*	*680*	*9200*	*45000*
CHROMIUM	*4.5*	*4.4*	*6.2*	*7*	*4.2*	*3.3*	*270*	*6.1*
COBALT	*1.6 J*	*1.3 J*	*2.9 J*	*3.3 J*	*1 J*	*1.1 J*	*6.4 J*	*2.5 J*
COPPER	*13*	*4.3 J*	*33*	*28*	*4.5 J*	*4.3 J*	*260*	*32 J*
IRON	*3800*	*3300*	*5600*	*5300*	*3200*	*3300*	*12000*	*6000 J*
LEAD	*39 J*	*5.6 J*	*85 J*	*72 J*	*32 J*	*10 J*	*130 J*	*28 J*
MAGNESIUM	*710*	*310*	*750*	*760*	*310*	*180*	*670*	*1200*
MANGANESE	*130*	*62*	*180*	*190*	*42*	*54*	*280*	*190*
NICKEL	4 U	2 U	4 U	4 U	3 U	2 U	*170*	*5.9 J*
POTASSIUM	*340 J*	*240 J*	*430 J*	*530 J*	*180 J*	*100 J*	*500 J*	*290*
SELENIUM	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	*1.5 J*	1.4 U	0.66 U
SILVER	0.45 U	0.43 U	0.46 U	1 U	1 U	0.44 U	1 U	0.26 U
SODIUM	120 U	130 U	120 U	130 U	90 U	70 U	150 U	120 U
TOTAL MERCURY	0.11 U	0.1 U	0.1 U	0.11 U	0.11 U	0.11 U	0.13 U	0.06 U
VANADIUM	*7.5 J*	*9.1 J*	*7.9 J*	*8.7 J*	*6.5 J*	*5.2 J*	*18*	*2.8 J*
ZINC	*64*	*11*	*58*	*55*	*14*	*21*	*740*	*210 J*

TABLE 2-4

SOIL SAMPLING SUMMARY - INORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP040SLB	GP041SLA	GP041SLB	GP041SLC	GP042SLA	GP042SLB	GP042SLC	GP043SLA
ALUMINUM	3900 J	2400	4700	1500	5600	3600	2500	8100
ANTIMONY	0.71 UR	1.1 U	1.1 U	1 U	1.3 U	2 U	1.1 U	1.1 U
ARSENIC	3	1.5 J	3.2	0.83 U	2.7	15	1.8 J	2.7
BARIUM	32	180	160	19	65	120	19	360
BERYLLIUM	0.19 J	0.22 U	1 U	0.21 U	0.27 U	1 U	1 U	1 U
CADMIUM	0.17 U	0.22 U	0.22 U	0.21 U	0.27 U	0.22 U	0.21 U	0.23 U
CALCIUM	8800	17000	7800	470	36000	6400	540	46000
CHROMIUM	6.8	5.8	6.1	2 J	9	4.3	2.5	10
COBALT	4.5 J	1.8 J	4.9 J	0.67 J	1.1 J	2.2 J	1.3 J	12
COPPER	12 J	9.9	24	2.8 J	7.1	9.5	1.4 J	25
IRON	9400 J	3200	8900	1600	6400	3300	1900	11000
LEAD	7.2 J	29 J	55 J	2.6 J	35 J	18 J	2.1 J	32 J
MAGNESIUM	2300	330	1900	110	740	500	170	3900
MANGANESE	200	370	330	15	120	180	39	840
NICKEL	6.9 J	4 U	9 U	1 U	3 U	3 U	2 U	11
POTASSIUM	1900	200 J	730 J	47 J	280 J	320 J	86 J	3500 J
SELENIUM	0.73 U	1.1 U	1.1 U	1 U	1.3 U	1.1 U	1.1 U	1.1 U
SILVER	0.29 U	0.45 U	0.44 U	0.41 U	0.53 U	0.45 U	0.43 U	0.45 U
SODIUM	69 U	130 U	130 U	50 U	160 U	110 U	50 U	390
TOTAL MERCURY	0.05 U	0.11 U	0.11 U	0.1 U	0.12 U	0.11 U	0.11 U	0.12 U
VANADIUM	12	7.3 J	11 J	2.7 J	14	6.7 J	3.8 J	17
ZINC	40 J	47 J	110 J	6.1 J	37	23	7.7	79

TABLE 2-4

SOIL SAMPLING SUMMARY - INORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP044SLA	GP044SLB	GP045SLA	GP045SLB	GP045SLC	GP046SLA	GP046SLB	GP046SLC
ALUMINUM	*6000*	*6800*	*6900*	*5200*	*3000*	*2000 J*	*9500 J*	*4400 J*
ANTIMONY	1.2 U	9 U	1.2 U	1.1 U	1.1 U	1 UJ	5 UJ	*600 J*
ARSENIC	*3.5*	*2.9*	*1.9 J*	2 U	0.84 U	0.82 U	*8.2*	*6.6*
BARIUM	*260*	*320*	*110*	*79*	*26*	*22*	*1200*	*130*
BERYLLIUM	1 U	1 U	0.24 U	1 U	1 U	0.11 J	0.07 U	*0.08 J*
CADMIUM	0.24 U	*0.59 J*	0.24 U	0.21 U	0.21 U	0.15 U	0.17 U	*0.21 J*
CALCIUM	*26000*	*25000*	*9700*	*2200*	*750*	*520*	*100000*	*37000*
CHROMIUM	*13*	*15*	*8.2*	*5.1*	*4*	*2.9*	*21*	*23*
COBALT	*7.6 J*	*7.1 J*	*8.2 J*	*1.9 J*	*0.94 J*	*1.1 J*	*16*	*6.5 J*
COPPER	*25*	*67*	*18*	*12*	*2.4 J*	2 UJ	*130 J*	*150 J*
IRON	*8500*	*7700*	*14000*	*4000*	*2900*	*2500 J*	*48000 J*	*19000 J*
LEAD	*53 J*	*240 J*	*11 J*	*29 J*	*4.4 J*	*6.3 J*	*150 J*	*3300 J*
MAGNESIUM	*2500*	*1600*	*4000*	*380*	*250*	*160*	*6200*	*1100*
MANGANESE	*680*	*700*	*480*	*85*	*38*	*22*	*2600*	*360*
NICKEL	10 U	9 U	*11*	4 U	2 U	*6.2 J*	*110 J*	*310 J*
POTASSIUM	*2500 J*	*2000 J*	*2700 J*	*210 J*	*140 J*	*80*	*4700*	*510*
SELENIUM	1.2 U	1.3 U	1.2 U	1.1 U	1.1 U	0.64 U	0.7 UJ	0.76 U
SILVER	0.48 U	1 U	0.47 U	0.43 U	0.42 U	0.25 U	0.28 U	1 U
SODIUM	290 U	240 U	*290*	130 U	80 U	70 U	*940*	250 U
TOTAL MERCURY	0.12 U	0.13 U	0.12 U	0.1 U	0.11 U	0.05 U	0.1 U	*0.13*
VANADIUM	*14*	*15*	*20*	*8 J*	*6.9 J*	*2.8 J*	*17*	*6 J*
ZINC	*92*	*200*	*51*	*45*	*13*	*9.5 J*	*300 J*	*1000 J*

TABLE 2-4

SOIL SAMPLING SUMMARY - INORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP047SLA	GP047SLB	GP048SLA	GP048SLB	GP048SLC	GP049SLA	GP049SLB	GP049SLC
ALUMINUM	2800	4400	1800	5200	2300	8400	8000	5900
ANTIMONY	1.1 U	1.1 U	1.3 U	1.1 U	1.1 U	2 U	1.3 U	2 U
ARSENIC	37	2 U	3	2 J	2 U	59	83	10
BARIUM	160	80	47	69	21	440	330	2200
BERYLLIUM	1 U	1 U	0.25 U	1 U	0.23 U	1 U	1 U	2 U
CADMIUM	0.23 U	0.22 U	0.25 U	0.22 U	0.23 U	3.2	3.3	0.24 U
CALCIUM	65000	36000	130000	2900	490	29000	21000	7500
CHROMIUM	53	6	4.8	3.5	2.8	18	13	17
COBALT	2.9 J	1.5 J	4.3 J	1.7 J	1 U	7 J	13	6.7 J
COPPER	26	6.9	6.5	14	4.8 J	60	26	37
IRON	10000	3100	2800	2700	1800	20000	13000	10000
LEAD	17 J	7.3 J	5.3 J	13 J	2.6 J	260 J	78 J	140 J
MAGNESIUM	1100	690	1900	350	180	1900	2400	1000
MANGANESE	450	150	110	88	23	900	940	260
NICKEL	8 U	3 U	3 U	3 U	1 U	12	9 U	12
POTASSIUM	490 J	310 J	630 J	290 J	190 J	5400 J	2600 J	1100 J
SELENIUM	1.1 U	1.1 U	1.3 U	1.1 U	1.1 U	1 U	1.3 U	1.2 U
SILVER	0.45 U	0.45 U	0.51 U	0.45 U	0.45 U	0.42 U	0.5 U	0.48 U
SODIUM	270	170 U	360	100 U	90 U	340	240 U	240 U
TOTAL MERCURY	0.86	4.4	0.13 U	0.11 U	0.11 U	0.1 U	0.13 U	0.12 U
VANADIUM	7.5 J	7.4 J	5.7 J	5.4 J	5.2 J	14	24	18
ZINC	140	23	16	14	15	900	840	900

TABLE 2-4

SOIL SAMPLING SUMMARY - INORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP050SLA	GP050SLB	GP051SLA	GP051SLB	GP051SLC	GP052SLA	GP052SLB	GP053SLA
ALUMINUM	4400 J	13000 J	5500	4200	13000	6600 J	5900 J	3600
ANTIMONY	0.76 UR	2 UJ	1.3 U	2 U	2 U	2 UJ	5 UJ	1.3 U
ARSENIC	1.5 J	3.1 J	5.8	8.2	2 U	3.8 J	2.5 J	2.5 J
BARIUM	300	910	230	190	460	520	210	280
BERYLLIUM	0.24 J	0.42 J	1 U	2 U	1 U	0.24 J	0.2 J	0.27 U
CADMIUM	0.19 U	0.24 U	1.4	0.28 J	0.27 U	0.19 U	0.28 U	1 U
CALCIUM	41000	97000	37000	6900	20000	76000	16000	99000
CHROMIUM	5.9	12	9.8	7	9.1	14	12	6.7
COBALT	3.7 J	8.8 J	10 J	6.8 J	5 J	3.5 J	1.4 J	3.1 J
COPPER	13 J	45 J	52	40	21	28 J	31 J	20
IRON	9400 J	21000 J	8900	9100	8500	4500 J	9800 J	4100
LEAD	13 J	57 J	84 J	53 J	32 J	39 J	90 J	20 J
MAGNESIUM	3200	6300	2400	660	2000	1700	1200	1600
MANGANESE	570	1400	460	230	890	950	400	580
NICKEL	12 J	10 J	8 U	12	6 U	3.6 J	4.3 J	5 U
POTASSIUM	2100	7300	640 J	500 J	3000 J	1200	930	940 J
SELENIUM	0.75 U	1.1 U	1.3 U	1.4 J	1.3 U	0.88 U	1.2 U	1.3 U
SILVER	0.31 U	0.4 U	0.52 U	0.46 U	0.54 U	0.31 U	0.46 U	0.54 U
SODIUM	80 U	690	210 U	260 U	550 U	100 U	120 U	360
TOTAL MERCURY	0.21	0.26	0.23	0.11 U	0.14 U	0.15	0.09 U	0.13 U
VANADIUM	10 J	20	13	16	17	13	15 J	9 J
ZINC	43 J	71 J	520	190	50	120 J	87 J	54

TABLE 2-4

SOIL SAMPLING SUMMARY - INORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP053SLB	GP053SLC	GP054SLA	GP054SLB	GP054SLC	GP055SLA	GP055SLB	GP056SLA
ALUMINUM	2900	1500	8600 J	5500 J	2700 J	4800	2200	9300
ANTIMONY	1.6 U	1.1 U	0.74 UR	0.68 UR	0.75 UR	1.2 U	1.1 U	2 U
ARSENIC	3 U	0.88 U	2.3 J	0.93 U	0.94 U	3.4	0.85 U	6.3
BARIUM	130	12	52	47	16	94	18	930
BERYLLIUM	0.32 U	0.22 U	0.26 J	0.23 J	0.09 J	1 U	1 U	1 U
CADMIUM	0.32 U	0.22 U	0.18 U	0.16 U	0.18 U	0.24 U	0.21 U	0.21 U
CALCIUM	80000	530 J	2100	1400	400	3000	380	120000
CHROMIUM	5.6	2.1 J	11	5	3.4	12	3.2	36
COBALT	1.8 J	0.71 J	0.74 U	0.74 U	0.75 U	2.2 J	1.1 J	15
COPPER	14	6.5	5 UJ	3 UJ	0.46 UJ	15	1.6 J	83
IRON	4400	1500	5000 J	2700 J	2100 J	19000	2700	47000
LEAD	9.5 J	1.8 J	30 J	11 J	2 J	73 J	3 J	150 J
MAGNESIUM	1600	120	480	350	170	520	180	9500
MANGANESE	220	9.7	110	89	40	350	61	2500
NICKEL	3 U	1 U	0.72 UJ	0.72 UJ	0.73 UJ	5 U	2 U	32
POTASSIUM	740 J	59 J	240	180	83	220 J	68 J	17000 J
SELENIUM	1.6 U	1.1 U	0.72 U	0.72 U	0.73 U	1.2 U	1.1 U	1.1 U
SILVER	0.65 U	0.44 U	0.3 U	0.27 U	0.31 U	0.48 U	0.42 U	0.42 U
SODIUM	270 U	60 U	80 U	60 U	80 U	140 U	80 U	4500
TOTAL MERCURY	0.17 U	0.11 U	0.1 U	0.06 U	0.06 U	0.12 U	0.11 U	0.11 U
VANADIUM	7.8 J	3.4 J	19	8 J	5.6 J	13	5.3 J	21
ZINC	43	5.5	52 J	110 J	1.8 J	49	6.3	48

TABLE 2-4

SOIL SAMPLING SUMMARY - INORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP201SLA	GP201SLA (Duplicate)	GP202SLA	GP202SLA (Resample)	GP203SLA	GP204SLA	GP205SLA	GP206SLA
ALUMINUM	*5300*	*4500*	*3200*	*3800*	*4800*	*4900*	*11000*	*8000*
ANTIMONY	3 UJ	4 UJ	260 J	1.6 U	2.2 UR	2 UR	2.3 UR	2.4 UR
ARSENIC	*5.2 J*	*4.4 J*	*18 J*	*5.1*	*2.5 J*	1.2 UR	*2.6 J*	*2.8 J*
BARIUM	*110*	*87*	*78*	*48*	*73*	*54*	*37*	*120*
BERYLLIUM	1 U	1 U	1 U	0.22 U	1 U	1 U	1 U	1 U
CADMIUM	0.14 U	0.15 U	0.15 U	0.22 U	0.15 U	0.14 U	0.16 U	0.17 U
CALCIUM	*1700 J*	*1300 J*	*3000 J*	*1600*	*2100 J*	*1300 J*	*940 J*	*3600 J*
CHROMIUM	*7.7*	*5.3*	*2.8*	*6.8*	*3.9*	*4.5*	*13*	*10*
COBALT	1 U	0.83 U	0.82 U	*1.6 J*	0.85 U	0.79 U	2 U	2 U
COPPER	*17*	*12*	*9.6*	*13*	*6.5*	5 U	6 U	*9.8*
IRON	*5900*	*5900*	*2900*	*6100*	*4200*	*4600*	*13000*	*8500*
LEAD	*210 J*	*220 J*	*2300 J*	*63*	*41 J*	*15 J*	*8.7 J*	*35 J*
MAGNESIUM	*370*	*290*	*370*	*310*	*440*	*350*	*630*	*710*
MANGANESE	*142*	*120*	*170*	*140*	*220*	*190*	*65*	*260*
NICKEL	*1.7 J*	*1 J*	0.8 U	*3.6*	2 UJ	0.77 U	*1.8 J*	*1.7 J*
POTASSIUM	240 U	170 U	130 U	*240*	220 U	200 U	380 U	580 U
SELENIUM	0.75 U	0.8 U	0.8 U	1.1 U	0.83 U	0.77 U	0.87 U	0.9 U
SILVER	0.46 U	0.49 U	0.48 U	0.34 U	0.5 U	0.47 U	0.52 U	0.55 U
SODIUM	190 U	200 U	200 U	*130 J*	200 U	190 U	210 U	220 U
TOTAL MERCURY	0.05 U	0.06 U	0.1 U	0.11 U	0.06 U	0.05 U	0.05 U	0.06 U
VANADIUM	8 U	7 U	4 U	*9.3*	7 U	9 U	*25*	*18*
ZINC	*67 J*	*65 J*	*71 J*	*62*	*37 J*	*16 J*	*16 J*	*36 J*

TABLE 2-4

SOIL SAMPLING SUMMARY - INORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	GP207SLA	GP208SLA	GP209SLA	GP210SLA	GP211SLA	GP212SLA	GP213SLA	GP214SLA
ALUMINUM	8500	7800	8100	6200	7700	7000	2900	4300
ANTIMONY	2 UR	2 UR	2.1 UR	1.8 UR	2.3 UJ	2 UJ	1.9 UJ	1.9 UJ
ARSENIC	3 J	3 J	2.4 J	1.9 J	1.4 U	1.2 U	1.1 U	1.2 U
BARIUM	37	34	31	30	37	31	38	25
BERYLLIUM	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CADMIUM	0.14 U	0.14 U	0.15 U	0.13 U	0.2 U	0.18 U	0.17 U	0.17 U
CALCIUM	4700 J	21000 J	1400 J	3200 J	5500	7500	420	5000
CHROMIUM	12	13	15	7.1	26	14	4.6	6.8
COBALT	1 U	1 U	0.81 U	0.72 U	0.89 U	0.77 U	0.74 U	0.76 U
COPPER	5.7	7.1	6.2	5 U	5 U	4 U	3 U	2 U
IRON	12000	10000	7500	5600	8700	7800	2400	5100
LEAD	12 J	12 J	14 J	8.6 J	16 J	19 J	12 J	7.3 J
MAGNESIUM	860	890	600	650	720	640	200	460
MANGANESE	100	85	58	69	81	79	97	54
NICKEL	1.6 J	1.4 J	1.7 J	0.87 J	4.3 J	3.4 J	1.7 J	2.1 J
POTASSIUM	600 U	570 U	460 U	380 U	330 U	320 U	120 U	210 U
SELENIUM	0.76 U	0.75 U	0.79 U	0.7 U	0.86 U	0.75 U	0.72 U	0.74 U
SILVER	0.46 U	0.45 U	0.48 U	0.42 U	0.52 U	0.45 U	0.44 U	0.45 U
SODIUM	190 U	180 U	190 U	170 U	210 U	180 U	180 U	180 U
TOTAL MERCURY	0.05 U	0.05 U	0.05 U	0.05 U	0.06 U	0.05 U	0.05 U	0.05 U
VANADIUM	23	19	15	9.5	21	16	6 U	12
ZINC	34 J	26 J	72 J	19 J	26	34	12	18

In the tables the following sample identifiers were used:

- The SLA on the sample designation was a soil sample collected from 0 - 6 inches below land surface (bls);
- The SLB represents a soil sample collected from 18 - 24 inches bls;
- The SLC represents a soil sample collected from 36 - 42 inches bls;
- The numbers 00X in GP004SLA corresponds to the Grid number.
- The residential soil samples are represented by the 200 series designation, for example, GP204SLA

Volatile Organic Contamination

The RI investigation soil sampling results did not reveal significant contamination of volatile organic constituents in surface soils or to the sampled depth of 52 inches bls for both onsite and offsite soil samples. Seven volatile organic constituents were detected with toluene and carbon disulfide being the most prevalent. Toluene was detected only as an estimated value below the detection limit of the analytical method. Carbon disulfide detections ranged from estimated values of 2 to 810 µg/kg. The estimated concentration of 810 µg/kg was detected in GP009SLB. Other carbon disulfide concentrations were significantly lower. Chlorinated volatile organics were detected but were only an estimated concentration below the method detection limit.

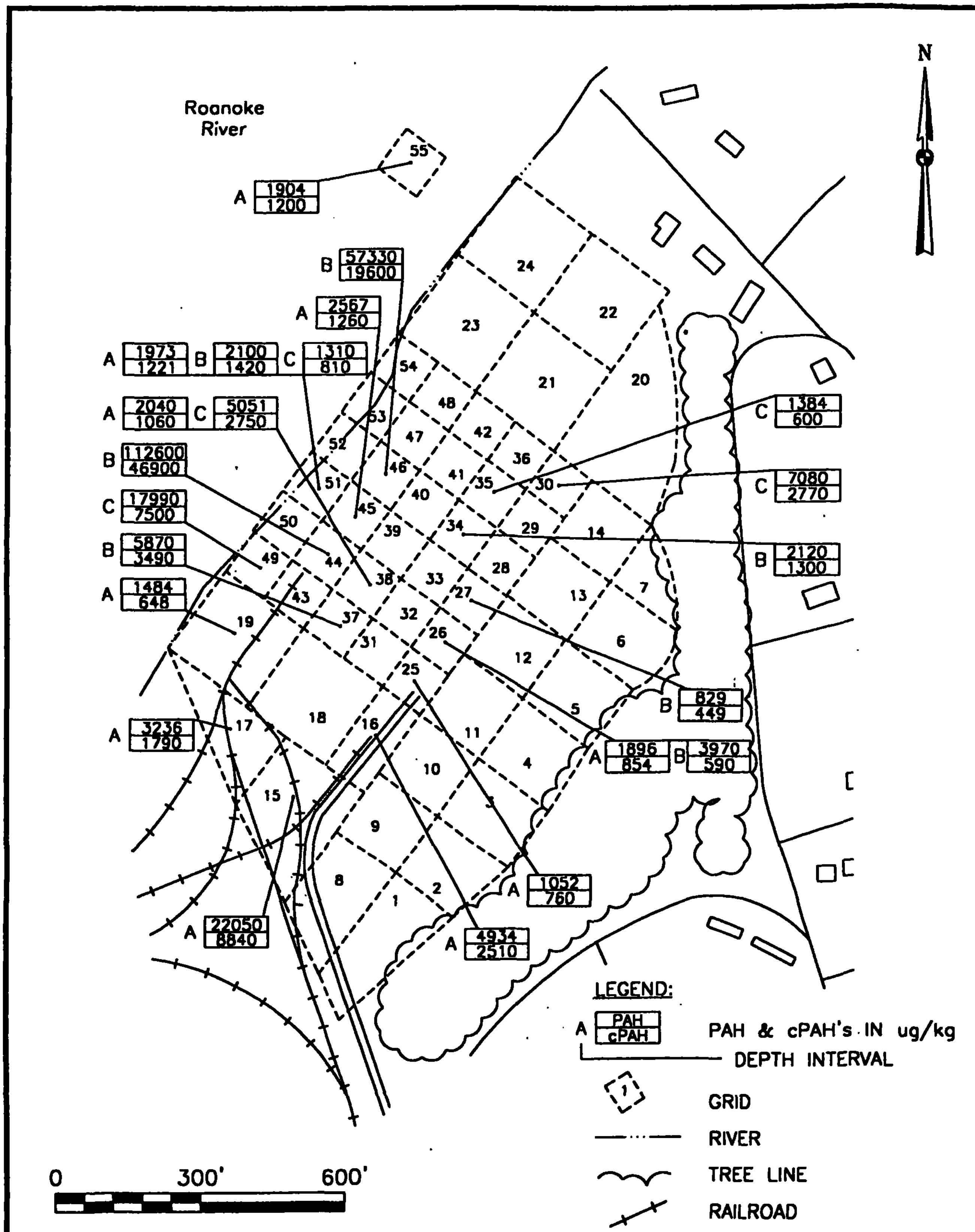
No areas of significant volatile organic contamination were identified either onsite or offsite based on this data.

Extractable Organic Contamination

The extractable organic compounds, predominantly the polynuclear aromatic hydrocarbons (PAHs), were extensively detected in surface and subsurface soils throughout onsite and offsite soil. However, most of the detections highlighted in the tables were below the method detection limits and reported as estimated concentrations. Some of the soils contained concentrations of the carcinogenic PAHs (cPAHs) near or an order of magnitude above the detection limits. The highest constituent detected was pyrene at 18,000 µg/kg in the soil sample collected from GP044SLB. Samples from GP044SLB, GP046SLB, and GP049SLC all contained PAHs.

Offsite locations GP201SLA, GP202SLA, and GP214SLB contained PAHs just below the method detection limit. However, locations GP202SLA (resample) and GP214SLA both contained a signficant level of PAHs with the highest concentration of fluorene at 9100 µg/kg in GP214SLA. **Figure 2-2** shows the depth intervals and concentrations of PAHs and cPAHs detected above the method detection limits for onsite soils. **Figure 2-3** shows the concentrations of PAHs and cPAHs detected above the method detection limits for offsite surface soils.

Figure 2-2 shows the areas of the site as potential areas of significant PAH contamination. These areas were typically located in former process areas centrally located on the Georgia-Pacific property. The lateral extent of the PAH contamination was not significant beyond the site property. However, as Figure 2-3 shows, there were areas offsite which had low PAH contamination. These offsite areas were



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PAH and cPAH
Detected in Onsite Soils

Figure No.
2-2

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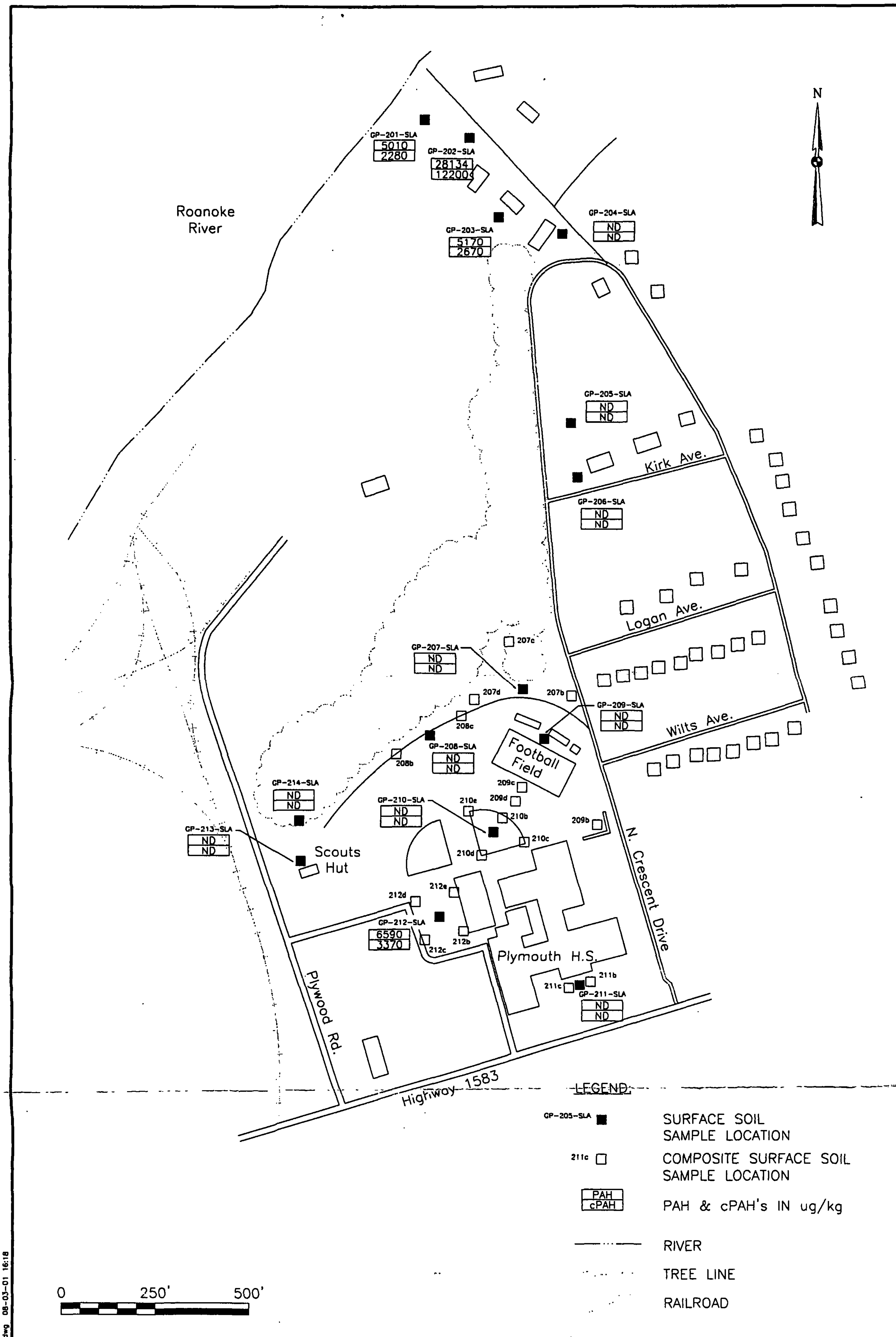

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Georgia-Pacific Hardwoods Plymouth, North Carolina CDM	PAH & cPAH Detected in Offsite Soils	Figure No. 2-3 6/02

located adjacent to the site where airborne or surface runoff could have impacted the soils causing these areas of contamination.

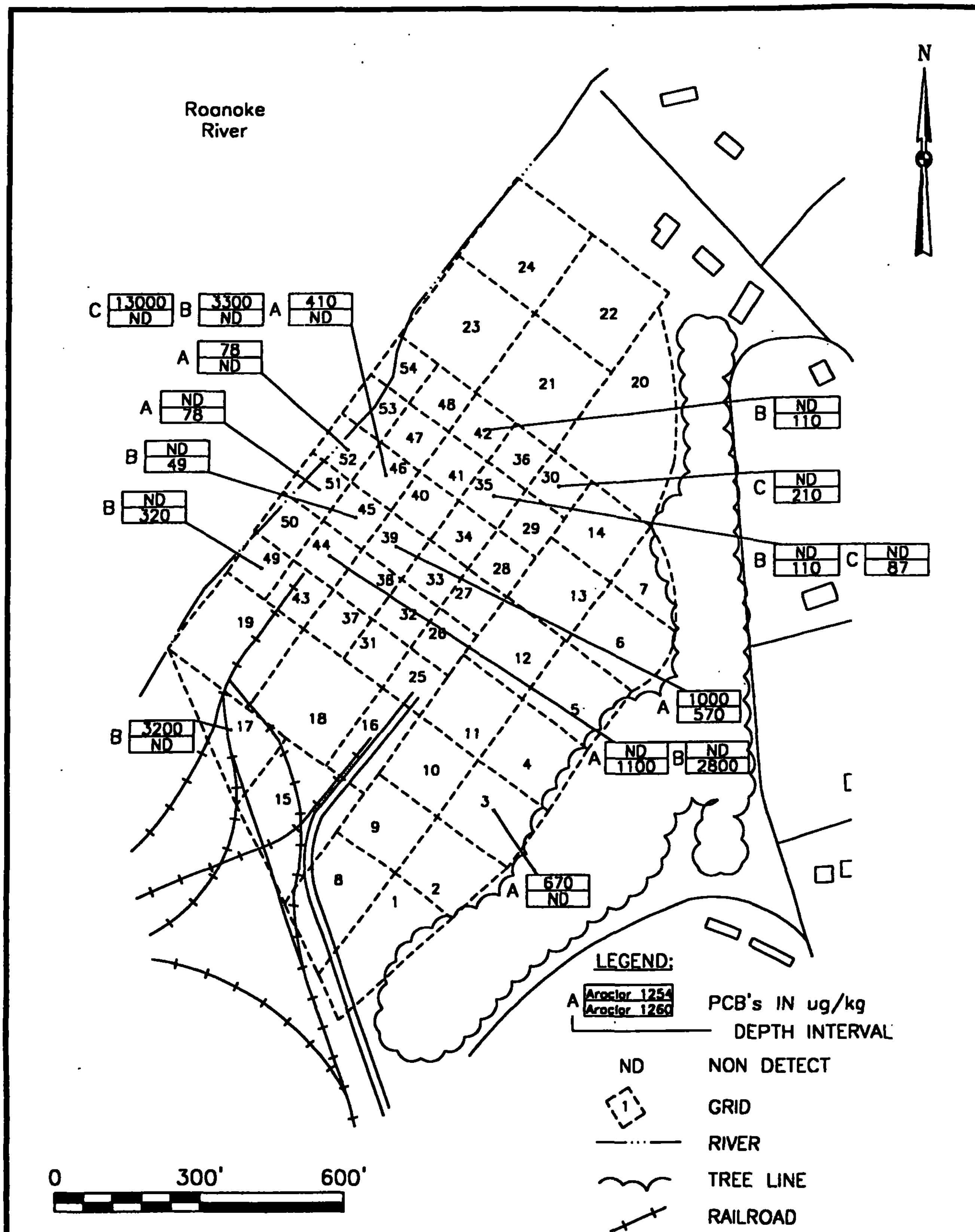
Downward migration of PAHs into the shallow groundwater could have occurred since some of the subsurface samples collected showed PAH contamination. See section 4 for the discussion of PAHs in groundwater.

Prior to initiating the removal action, the PAH analytical data were compared to the SSRALs established for the site. Only Grid 44 exceeded the SSRAL for Total PAH. The SSRAL for cPAHs was also nearly exceeded in Grid 44. The SSRAL for Total PAHs was 100,000 ug/kg and 50,000 ug/kg for Total cPAH.

<u>Pesticides and Polychlorinated biphenyls</u>
Trace levels of chlorinated pesticides were detected in the onsite and offsite soil. The most frequently detected pesticide was 4,4'- DDT with the highest concentration reported as 69 µg/kg in GP019SLA. However, PCBs mixtures were detected at significant levels in several samples collected onsite. None of the offsite soil contained PCBs. Aroclors 1254 and 1260 were the only PCBs detected with the highest concentration being 13,000 µg/kg of Aroclor 1254 in GP046SLC. Also noteworthy was that the level of Aroclor 1254 at this location increased as sample depth increased. (GP046SLA - 410 µg/kg, GP046SLB - 3300 µg/kg, and GP046SLC - 13,000 µg/kg. Groundwater is just below the SLC sample depth. The next highest concentration of Aroclor 1254 was detected in GP017SLB. However the 3200 µg/kg of Aroclor 1254 was not detected in the duplicate from the same sample location and depth. The highest concentration of Aroclor 1260 was detected in GP044SLB at 2,800 µg/kg. **Figure 2-4** shows the depths and concentrations of PCBs detected above the method detection limits for onsite soils.

Contaminant levels of pesticides and/or PCBs did not reveal any significant source areas on or off the site. However, Grid 46 PCB concentration did increase with depth which would indicate a downward migration into the shallow groundwater. See section 4 for discussion of groundwater sample analysis in or near Grid 46.

<u>Dioxin/Furan Chemical Contamination</u>
Varying concentrations of dioxins and furans were detected in all the samples collected both at the surface and in the subsurface soil. This was for both onsite and offsite sample locations. Octachlorodibenzodioxin (OCDD) was the most frequently detected dioxin and had the highest concentrations. The highest OCDD was detected in the sample collected from GP040SLA and reported as 10,000,000 ng/kg (equivalent to 10,000 µg/kg). Other dioxins and furans were also reported in the sample from GP040SLA and the toxic equivalent value (TEQ) was estimated at 27,000 ng/kg. The TEQ is calculated to normalize the toxicity of the detected dioxin-like compounds to the toxicity of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD), the most widely studied and most toxic of the dioxins. Each dioxin-like compound is assigned a toxic equivalence factor (TEF) as defined in *Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-dioxins and Dibenzofurans (CDDs and CDFs) and 1989 Update* (EPA, 1989). The TEQ is the sum of the concentrations of the dioxin-like compounds multiplied by their respective TEFs. The TEQ reported in



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PCBs Detected in Onsite Soils

Figure No. 2–4

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GP041SLA was estimated as 28,000 ng/kg with OCDD detected at an estimated concentration of 8,100,000 ng/kg. The other grids which contained notable concentrations of dioxins and furans included: GP037, GP039, GP041, GP046, GP047, and GP051. Samples collected from GP046 showed TEQ increasing as samples were collected deeper from 11 ng/kg in the GP046SLA, 97 ng/kg in the GP046SLB, and to 1300 ng/kg in the GP046SLC. These concentrations were estimated. However, the TEQ concentrations decreased with increasing depth in the three sample intervals from GP041, GP051, and GP053. **Figure 2-5** shows the TEQ values for the surface soil locations where the TEQ was greater than 100 ng/kg. **Figure 2-6** shows the TEQ values for the subsurface soil locations where the TEQ was greater than 10 ng/kg.

The samples collected in the neighborhood contained dioxins and furans. The TEQ concentrations in the neighborhood ranged from non-detected (quantitation limit of 1.9 ng/kg) to 36 ng/kg. The sample from GP205SLA contained the highest TEQ of 36 ng/kg and the highest concentration of OCDD of 27,000 ng/kg.

The analytical data and Figures 2-5 and 2-6 show the general areas of dioxin and furan contamination potentially occurring from source areas on the site. Other dioxin and furan concentrations were below the site source area levels. In addition no significant downward migration is evident in the data collected.

Grids 40 and 41 were selected for excavation during the removal action due to exceedance of the TEQ of 1 µg/kg (1,000 ng/kg) SSRAL. See the Post Removal Data discussion below for further discussion of the selection of grids requiring excavation.

<u>**Inorganic Chemical Contamination**</u>
The following table summarizes the ranges of concentrations in mg/kg of metals detected in the surface and subsurface soils collected onsite and offsite.

	ONSITE		OFFSITE	
Metal	**Minimum**	**Maximum**	**Minimum**	**Maximum**
Aluminum	520	16,000	2,900	11,000
Antimony	0.55	600	1.6	260
Arsenic	0.82	83	1.1	18
Barium	2.6	2,200	25	120
Beryllium	0.07	2.5	0.22	1
Cadmium	0.13	3.3	0.13	0.22
Calcium	210	130,000	420	21,000
Chromium	1.3	270	2.8	26
Cobalt	0.44	24	0.72	2
Copper	0.43	260	2	17
Iron	300	48,000	2,400	13,000
Lead	1.4	3,300	7.3	2,300
Magnesium	54	9,500	200	890
Manganese	2.5	3,400	54	260

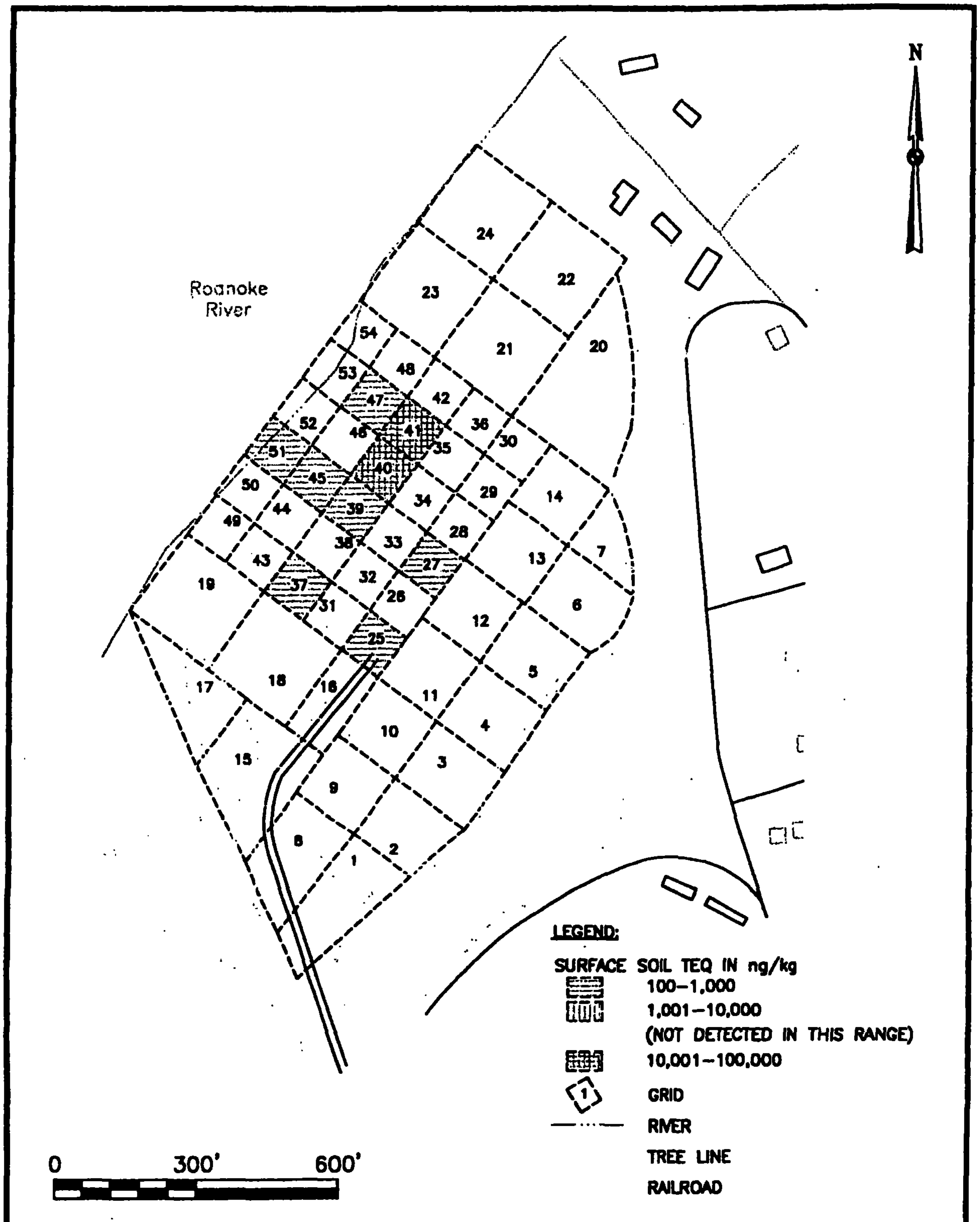
	ONSITE		OFFSITE	
Metal	Minimum	Maximum	Minimum	Maximum
Nickel	0.65	310	0.77	4.3
Potassium	18	17,000	120	600
Selenium	0.59	1.6	0.7	1.1
Silver	0.22	270	0.34	0.55
Sodium	50	4,500	130	220
Total Mercury	0.05	4.4	0.05	0.11
Vanadium	1	110	4	25
Zinc	1.8	1,000	12	72

In general, the onsite soils showed higher concentrations of the nutrient metals; calcium, iron, potassium, and sodium, than offsite soils. Aluminum was the other metal detected at a significant concentration however was similar to offsite concentrations.

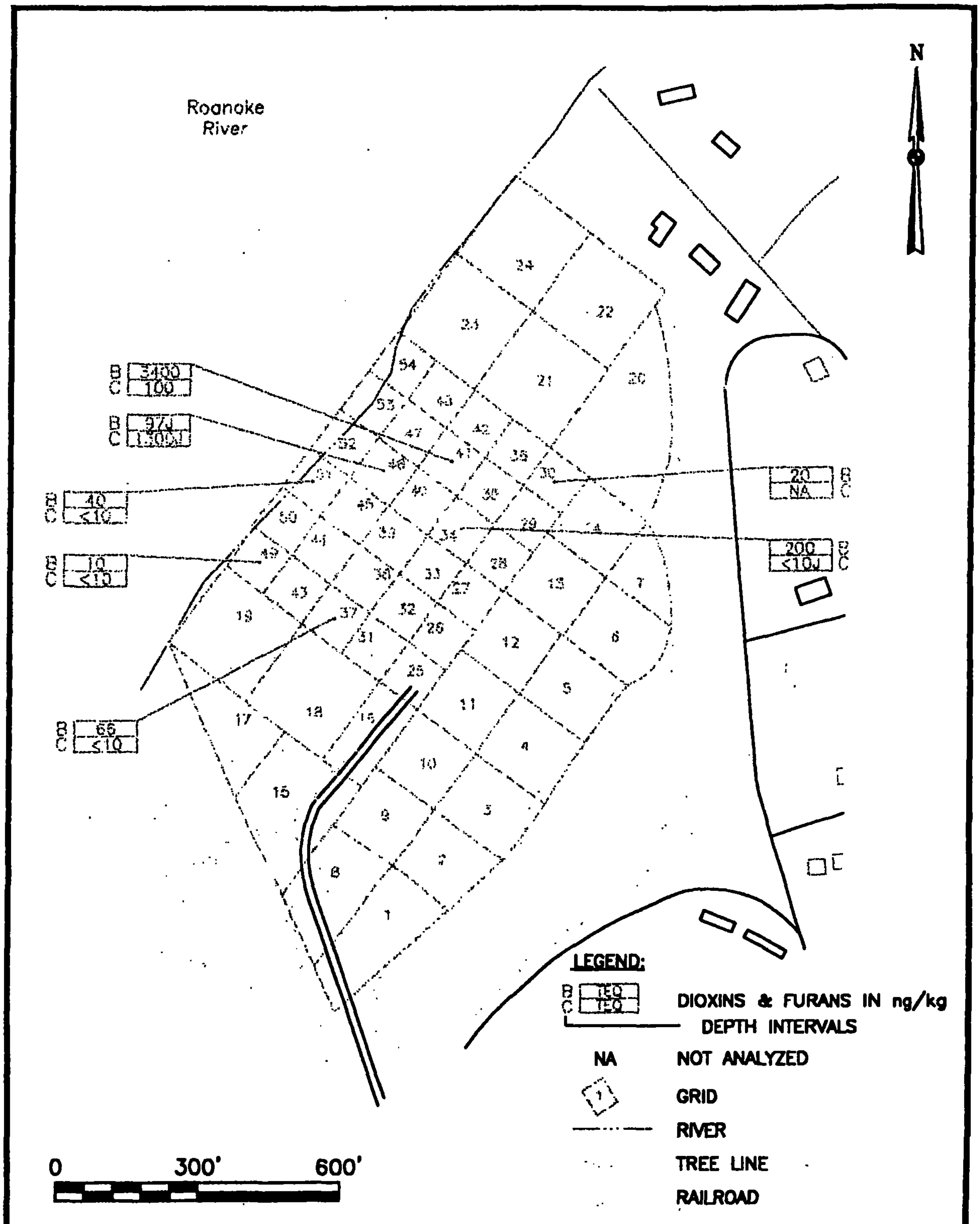
Other metals were detected at higher concentrations at individual grid locations compared to the site average concentrations. Arsenic was detected in grid sample GP049SLA at a concentration of 59 mg/kg and at a concentration of 83 mg/kg in GP049SLB. The highest concentration of arsenic detected in an offsite location was an estimated concentration of 18 mg/kg at GP202SLA. Barium was detected in GP049SLC at a concentration of 2,200 mg/kg, whereas the highest concentration of barium detected offsite was 120 mg/kg in GP206SLA. Chromium was detected at 270 mg/kg in GP039SLA whereas the average concentration of chromium including offsite was less than 15 mg/kg. The highest concentration of copper was also detected in GP039SLA at 260mg/kg. Lead was detected in GP046SLC at an estimated concentration of 3,300mg/kg and in GP202SLA (offsite) at an estimated concentration of 2,300 mg/kg. The lead concentration increased with depth for the samples collected in grid GP046. The majority of soil samples collected onsite and offsite contained lead concentrations less than about 50 mg/kg. The highest magnesium concentration was detected onsite in GP056SLA at 9,500 mg/kg. Another metal with a significant high concentration was zinc, which was detected in GP046SLC at an estimated concentration of 1,000 mg/kg. At this sample location the zinc concentration increased as the depth increased which is similar to the lead concentration also at this location. In addition, zinc was detected in GP049SLA, GP049SLB, and GP049SLC at concentrations of 900, 840, and 900 mg/kg, respectively. Most of the other soil samples both onsite and offsite contained zinc concentrations less than 100 mg/kg. Figure 2-7 shows the onsite sampling grids with the highest detections of metals other than the nutrient metals.

<u>Post Removal Data</u>

Table 2-5 presents the detected contaminants of concern from the removal action confirmation samples collected by BBLES. EPA reviewed the RI data and selected grids for excavation. The method of selecting grids for excavation was based on elevated contaminant levels of various constituents as well as physical evidence of



Georgia-Pacific Hardwoods Plymouth, North Carolina CDM	Dioxins and Furans TEQs Detected in Onsite Surface Soils	Figure No. 2-5 7/00



Georgia-Pacific Hardwoods Plymouth, North Carolina	Dioxins and Furans TEQs Detected in Subsurface Onsite Soils	Figure No. 2-6
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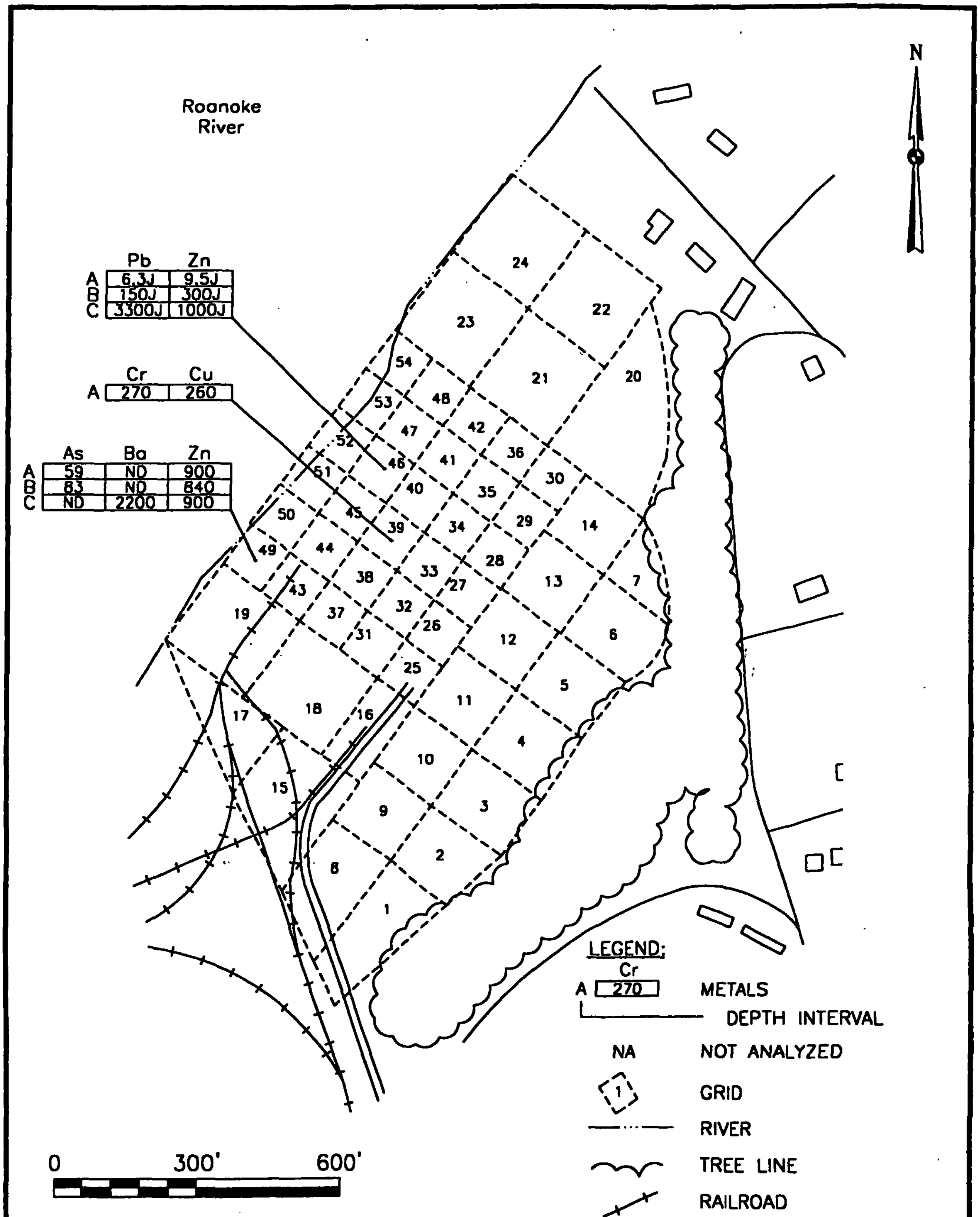

Georgia–Pacific Hardwoods Plymouth, North Carolina	Metals Detected in Onsite Soils	Figure No. 2-7
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TABLE 2-5

REMOVAL ACTION CONFIRMATION ANALYSES
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	Grid 39 CONF-39-COMP	Grid 40 CONF-4O-COMP	Grid 41 CONF-41-COMP	Grid 44 CONF-44-COMP	Grid 46 CONF-46-COMP	Grid 47 CONF-47-COMP	Grid 49 CONF-49-COMP
Polychlorinated Dibenzodioxins/Dibenzofurans (ng/kg)							
Hepta CDD	NA	1.1	1.2 U	NA	1.3 U	NA	NA
Hepta CDF	NA	0.55	1.2 U	NA	1.3 U	NA	NA
Octa CDD	NA	0.7 J	1.6 UJ	NA	1.7 UJ	NA	NA
Octa CDF	NA	1.6 UJ	1.7 UJ	NA	1.8 UJ	NA	NA
2,3,7,8-TCDD TEQ (SSRAL = 1 μg/kg)	NA	0.017	ND	NA	ND	NA	NA
Polynuclear Aromatic Hydrocarbons (ug/kg)							
Fluoranthene	NA	NA	NA	200 J	NA	NA	NA
Pyrene	NA	NA	NA	220 J	NA	NA	NA
Benzo(b)fluoranthene (cPAH)	NA	NA	NA	180 J	NA	NA	NA
Total PAHs (SSRAL=100,000 μg/kg)	NA	NA	NA	600 J	NA	NA	NA
Total cPAHs (SSRAL=50,000 μg/kg)	NA	NA	NA	180 J	NA	NA	NA
Pentachlorophenol (ug/kg)							
Pentachlorophenol *(SSRAL=25,000 μg/kg)*	NA	3040 UJ	NA	NA	NA	NA	NA
Inorganics (mg/kg)							
Arsenic *(SSRAL=30 mg/kg)*	16	NA	NA	NA	NA	1.4	10
Chromium *(SSRAL=200 mg/kg)*	33 J	NA	NA	NA	NA	NA	NA
Lead *(SSRAL=400 mg/kg)*	NA	NA	NA	NA	7.8	NA	NA

Notes:
cPAH = Carcinogenic polynuclear aromatic hydrocarbons
PAH = Polynuclear aromatic hydrocarbons
NA = Not analyzed
ND = Not detected
SSRAL = Site-specific removal action level

former site activities. Elevated concentrations of dioxins, furans, (expressed as TEQ), metals, or PAHs were compared to the SSRALs established by the EPA. Metals, dioxins, furans, or PAHs were evident as the primary contaminants in grids 39, 40, 41, 44, 46, 47, and 49. These grids were selected for excavation along with an area along the southern portion of the site which was formerly the asphalt mixing plant. However, later focused sampling of the areas of the former asphalt mixing plant did not reveal any contamination exceeding the site specific removal action levels. A more detailed discussion of the reasoning and methods for resampling these grids was provided in the *Removal Action Summary Report*. Following the excavation and offsite disposal of the soil, samples were collected from the bottom of the excavations to confirm the adequate removal of the contaminants. For grids 1, 2, and 3, only the arsenic concentration from the RI data slightly exceeded the SSRALs. Upon recommendation by Georgia-Pacific and concurrence by EPA these grids were resampled prior to the removal action. Table 2-5 above provides a confirmation that the targeted constituents were removed.

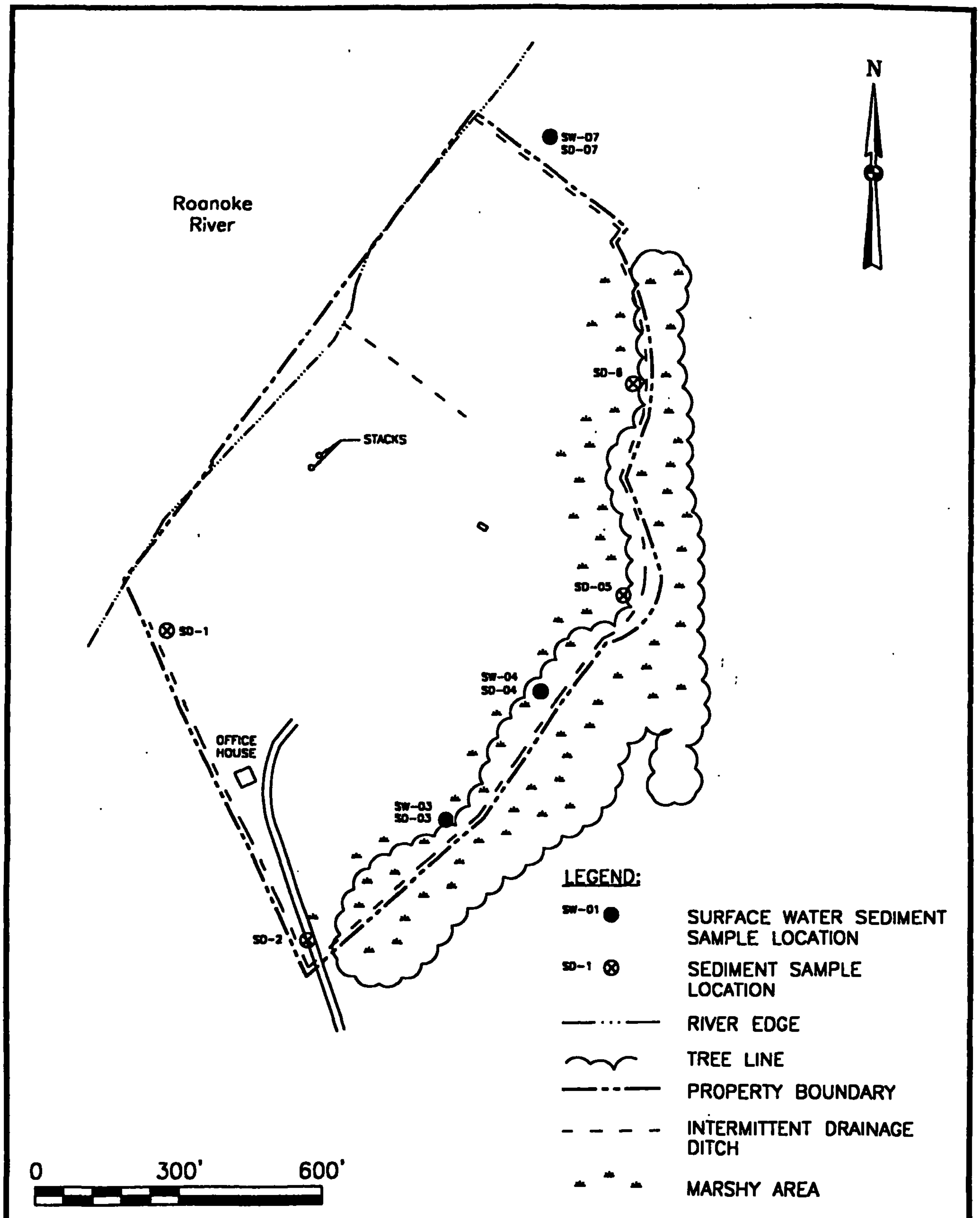
Section 3
Surface Water/Sediment Sampling Investigation

3.1 Purpose and Scope
Surface water and sediment sampling were conducted in the intermittent drainage ditches located onsite to determine the nature and extent of contamination in these areas. Three surface water and seven sediment samples were collected from the drainage ditches. The locations of all the surface water and sediment samples are shown on **Figure 3-1**. Note that it was intended for both a surface water and a sediment sample to be collected from each sampling location. In four locations, however, there was insufficient surface water to collect samples.

3.2 Methods
All surface water and sediment samples collected were grab samples and were collected according to the procedures established in the *Remedial Investigation Work Plan* (EPA, 1998) for the Georgia Pacific Site, and Section 4 of EPA's *Environmental Investigations Standard Operating Procedures and Quality Assurance Manual* (EPA, 1996). The surface water samples were collected from several inches below the air-water interface and sent to a CLP laboratory for analysis of all TCL/TAL constituents. Sediment samples were collected from the zero- to three-inch interval below the water-sediment interface and sent to a CLP laboratory for analysis of all TCL/TAL constituents as well as for dioxin/furan analysis.

3.3 Summary
The analytical results for the surface water and sediment samples collected at the site are summarized in **Tables 3-1** (surface water), and **Tables 3-2** through **3-4** (sediment). Note that for the purpose of summarizing, only chemicals detected at least once in each medium and their measured concentrations are presented in the summary tables. The complete data set of analytical results for the CLP laboratory analyses performed are provided in Appendix A.

In the summary tables, those concentrations considered to reflect a valid detection of unnatural contamination are printed in bold italicized text to distinguish them from the other measurements. Since organic chemicals are not believed to be naturally occurring in surface water, any detection of an organic chemical in surface water is considered to be unnatural contamination. The same is true for sediments. For the inorganics in both surface water and sediments, since no background surface water or sediment samples were collected at the site, the concentrations were compared to typical background concentrations at other North Carolina sites in an attempt to distinguish unnatural contamination from natural chemical concentrations.



Georgia-Pacific Hardwoods Plymouth, North Carolina CDM consulting · engineering · construction · operations	Surface Water/Sediment Sampling Locations	Figure No. 3-1 6/00

TABLE 3-1

SURFACE WATER SAMPLING SUMMARY
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	SW-3	SW-3 (Dup.)	SW-4	SW-7
VOLATILE ORGANICS				
ACETONE	20 U	20 U	10 U	***160***
INORGANICS				
ALUMINUM	50 U	50 U	1000	770
ARSENIC	***42***	***45***	***310***	***27***
BARIUM	140	140	260	49
CALCIUM	56000	55000	89000	18000
IRON	13000	14000	10000	7600
LEAD	2 U	2 U	4	3 U
MAGNESIUM	7900	7900	12000	3400
MANGANESE	***1900***	***1900***	***3000***	360
POTASSIUM	8400	8400	13000	3900 U
SODIUM	8600 U	8900	13000	21000
ZINC	5 U	5 U	36	24

Data Qualifiers

U-Material was analyzed for but not detected. The number is the minimum quantitation limit.

Concentrations presented in ug/L. Concentrations printed in bold italicized text are considered to reflect a valid detection of unnatural contamination.

TABLE 3-2

SEDIMENT SAMPLING SUMMARY - DIOXINS/FURANS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	SD-1	SD-2	SD-3	SD-3 (Dup.)	SD-4	SD-5	SD-6	SD-7
1,2,3,4,6,7,8-HEPTACHLORODIBENZODIOXIN	***6500***	***3300***	***4000***	***3600***	***23000***	190	110	***4500***
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN	***2400 J***	***970 J***	***730 J***	***580 J***	***2400 J***	9.4 U	9.3 U	***470 J***
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN	***110***	***41 J***	***54***	***33***	***150***	4.8 U	4.7 U	***38 J***
1,2,3,4,7,8-HEXACHLORODIBENZODIOXIN	***94 J***	***40 J***	***63 J***	***44 J***	***290 J***	4.8 U	4.7 U	***34 J***
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN	***73 J***	***28 J***	***30 J***	***18 J***	***77 J***	4.8 U	4.7 U	***17 J***
1,2,3,6,7,8-HEXACHLORODIBENZODIOXIN	***380 J***	***150 J***	***210 J***	***160 J***	***1000 J***	6.9 J	4.7 U	***160 J***
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN	***69***	***30 J***	***51***	***32***	***130***	4.8 U	4.7 U	***45 J***
1,2,3,7,8,9-HEXACHLORODIBENZODIOXIN	***200***	***94***	***120***	***82***	***460***	8	4.7 U	***92 J***
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN	12 UR	91 UR	***8.5 J***	32 UR	120 UR	4.8 UR	4.7 UR	30 UR
1,2,3,7,8-PENTACHLORODIBENZODIOXIN	***48***	***19 J***	***34 J***	***21 J***	***160***	4.8 U	4.7 U	***23 J***
1,2,3,7,8-PENTACHLORODIBENZOFURAN	***9.9 J***	***4.2 J***	***15 J***	***5.4 J***	***25 J***	4.8 UR	4.7 UR	150 UR
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN	***61 J***	***27 J***	***34 J***	***17 J***	***79 J***	4.8 U	4.7 U	***16 J***
2,3,4,7,8-PENTACHLORODIBENZOFURAN	***21 J***	***7.1 J***	***20 J***	***8 J***	***30 J***	4.8 U	4.7 U	***8.7 J***
2,3,7,8-TETRACHLORODIBENZODIOXIN	***8.7***	***3 J***	***4.3 J***	***1.5 J***	***16 J***	0.21 J	0.21 J	***12 J***
2,3,7,8-TETRACHLORODIBENZOFURAN	***5.9***	***3.3 J***	***5.5 J***	4.3 U	***12 J***	1.9 U	1.9 U	***100***
HEPTACHLORODIBENZODIOXIN (TOTAL)	***15000 J***	***3300 J***	***8600 J***	***7700 J***	***23000 J***	490 J	350 J	***12000 J***
HEPTACHLORODIBENZOFURAN (TOTAL)	***9200 J***	***3000 J***	***2300 J***	***1900 J***	***7300 J***	28 J	31 J	***1700 J***
HEXACHLORODIBENZODIOXIN (TOTAL)	***2400 J***	***1000 J***	***1500 J***	***1200 J***	***7400 J***	81 J	49 J	***1400 J***
HEXACHLORODIBENZOFURAN (TOTAL)	***3200 J***	***1200 J***	***1100 J***	***920 J***	***4700 J***	16 UJ	18 UJ	***930 J***
OCTACHLORODIBENZODIOXIN	***52000***	***58000***	***67000***	***56000***	***270000***	6200 J	4400 J	***82000***
OCTACHLORODIBENZOFURAN	***8900 J***	***3300***	***2400***	***1900***	***4500***	27 U	31 U	***1500***
PENTACHLORODIBENZODIOXIN (TOTAL)	***350 J***	***150 J***	***200 J***	***140 J***	***1100 J***	10 UJ	5 UJ	***180 J***
PENTACHLORODIBENZOFURAN (TOTAL)	***950 J***	***320 J***	***590 J***	***400 J***	***910 J***	4.8 UJ	4.7 UJ	***220 J***
TEQ (TOXIC. EQUIV. VALUE, FROM I-TEF/89)	***280 J***	***160 J***	***140 J***	***150 J***	***850 J***	9.9 J	5.7 J	***210 J***
TETRACHLORODIBENZODIOXIN (TOTAL)	160 UJ	***52 J***	***70 J***	***34 J***	***180 J***	0.21 J	0.21 J	***30 J***
TETRACHLORODIBENZOFURAN (TOTAL)	***470 J***	***150 J***	***180 J***	***140 J***	***450 J***	3.3 UJ	2.9 UJ	***250 J***

Data Qualifiers

J-Estimated value.
U-Material was analyzed for but not detected. The number is the minimum quantitation limit.
R-QC indicates that data unusable. Compound may or may not be present. Resampling and analysis necessary for verification.

Concentrations presented in ng/kg. Concentrations printed in bold italicized text are considered to reflect a valid detection of unnatural contamination.

TABLE 3-3

SEDIMENT SAMPLING SUMMARY - ORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	SD-1	SD-2	SD-3	SD-3 (Dup.)	SD-4	SD-5	SD-6	SD-7
VOLATILE ORGANICS								
ACETONE	16 UJ	***420 J***	***350***	***2800 J***	***1700***	11 UJ	12 U	***540 J***
METHYL ETHYL KETONE	16 UJ	***120***	***84***	***440***	180 U	11 UJ	12 U	***100 J***
EXTRACTABLE ORGANICS								
ACENAPHTHENE	***330 J***	1400 U	1200 U	1000 U	6900 U	1800 U	***110 J***	1800 U
ANTHRACENE	***650 J***	1400 U	1200 U	1000 U	6900 U	1800 U	490 U	1800 U
BENZO(A)ANTHRACENE	***2800***	1400 U	1200 U	1000 U	6900 U	1800 U	490 U	1800 U
BENZO(B AND/OR K)FLUORANTHENE	***4400 J***	1400 U	1200 U	1000 U	6900 U	1800 U	490 U	1800 U
BENZO(GHI)PERYLENE	***1000 J***	1400 U	1200 U	1000 U	6900 U	1800 U	490 U	1800 U
BENZO-A-PYRENE	***2100 J***	1400 UJ	1200 UJ	1000 UJ	6900 UJ	1800 UJ	490 UJ	1800 UJ
CARBAZOLE	***540 J***	1400 U	1200 U	1000 U	6900 U	1800 U	490 U	1800 U
CHRYSENE	***2900***	1400 U	1200 U	1000 U	6900 U	1800 U	490 U	1800 U
DIBENZOFURAN	***240 J***	1400 U	1200 U	1000 U	6900 U	1800 U	490 U	1800 U
FLUORANTHENE	***5600***	1400 U	1200 U	1000 U	6900 U	1800 U	***160 J***	***270 J***
FLUORENE	***340 J***	1400 U	1200 U	1000 U	6900 U	1800 U	***170 J***	1800 U
INDENO (1,2,3-CD) PYRENE	***1100 J***	1400 U	1200 U	1000 U	6900 U	1800 U	490 U	1800 U
PHENANTHRENE	***4800***	1400 U	***140 J***	1000 U	6900 U	1800 U	***71 J***	1800 U
PYRENE	***4700***	1400 U	***350 J***	***200 J***	6900 U	1800 U	***97 J***	***300 J***
PESTICIDES/PCBS								
4,4'-DDD (P,P'-DDD)	4.6 U	***540***	12 U	3.5 U	14 U	4 U	4.9 U	18 U
4,4'-DDE (P,P'-DDE)	4.6 U	***150***	12 U	3.5 U	14 U	4 U	4.9 U	18 U
4,4'-DDT (P,P'-DDT)	4.6 U	***190***	12 U	3.5 U	14 U	4 U	4.9 U	18 U
ENDOSULFAN II (BETA)	***6.1***	14 U	12 U	3.5 U	14 U	4 U	4.9 U	18 U

Data Qualifiers

J-Estimated value.
U-Material was analyzed for but not detected. The number is the minimum quantitation limit.

Concentrations presented in ug/kg. Concentrations printed in bold italicized text are considered to reflect a valid detection of unnatural contamination.

TABLE 3-4

SEDIMENT SAMPLING SUMMARY - INORGANICS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	SD-1	SD-2	SD-3	SD-3 (Dup.)	SD-4	SD-5	SD-6	SD-7
ALUMINUM	21000	13000	16000	17000	17000	3000	3000	13000
ARSENIC	***34 J***	***220 J***	***37***	***42 J***	***300 J***	1.1 U	3.7	***41***
BARIUM	230	***330***	130	130	230	21	13	86
CALCIUM	5600 J	10000 J	5800	5700 J	13000 J	1000	620	3600
CHROMIUM	21	14	22	17	15	4.2	4.5	17
COPPER	64	46	22	27	44	2 U	2 U	20 U
IRON	32000	***95000***	29000	32000	37000	4200	3200	17000
LEAD	***140 JN***	***72 J***	***51 J***	***49 J***	***94 J***	5.9 J	5.7 J	31 J
MAGNESIUM	4900	2500	3000	2900	1800	410	170	910
MANGANESE	590	960	370	340	630	200	18	110
NICKEL	15 J	11 J	10 U	6.2 J	6 J	2 U	1.6 J	10 U
POTASSIUM	3800	1700 U	3100 U	3000 U	1400 U	350 U	140 U	600 U
VANADIUM	38	40 U	43	39	30 U	9	7 U	30 U
ZINC	***190 J***	***260 J***	***130***	***160 J***	***340 J***	14	12	***150***

Data Qualifiers

J-Estimated value.
N-Presumptive evidence of presence of material.
U-Material was analyzed for but not detected. The number is the minimum quantitation limit.

Concentrations presented in mg/kg. Concentrations printed in bold italicized text are considered to reflect a valid detection of unnatural contamination.

3.3.1 Surface Water

As indicated in Table 3-1, the number of chemicals detected in the surface water samples collected at the site was relatively small. The spectrum of chemicals detected in at least one surface water sample from this area included only one volatile organic and 11 inorganics.

Volatile Organic Contamination

Volatile organic chemical contamination in surface water appears to be relatively insignificant. The only VOC detected in surface water was acetone and it was detected in only one surface water sample (SW-7) at a concentration of 160 ug/l. SW-7 is located in the northeastern part of the perimeter drainage ditch near the Roanoke River.

Inorganic Chemical Contamination

As indicated in Table 3-1, of the 11 inorganic chemicals detected in surface water at the site, only two appear to be at concentrations which are clearly indicative of unnatural contamination. These two chemicals, arsenic and manganese, were detected at concentrations significantly above typical background concentrations in at least two of the three surface water samples collected. The areal distribution of the arsenic and manganese contamination found in surface water in this remedial investigation is shown in **Figure 3-2.**

3.3.2 Sediment

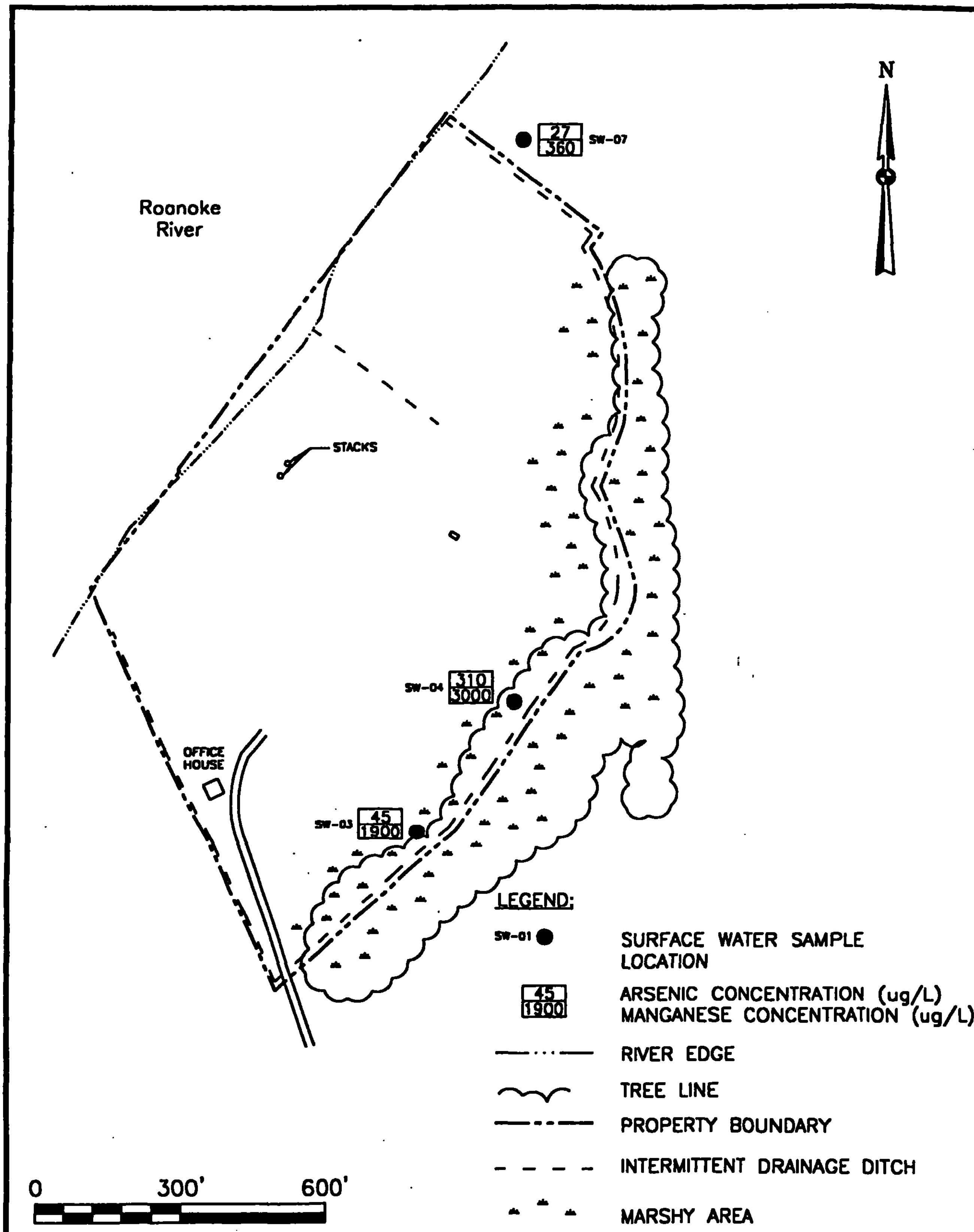
As indicated in Tables 3-2 through 3-4, a wide variety of chemicals were detected in the sediment samples collected at the site. The spectrum of chemicals detected in at least one sediment sample from this area included 17 dioxins/furans, 2 volatile organics, 14 extractable organics, 4 pesticides, and 14 inorganics. Sediments were only sampled at the surface to evaluate the potential for direct contact exposure to human or ecological receptors.

Dioxin/Furan Chemical Contamination

As indicated in Table 3-2, numerous dioxins/furans were found at concentrations which appear to be significantly above typical background concentrations in all the sediment samples except SD-5 and SD-6. The TEQ for the dioxins/furans measured in the sediments ranged from 9.9 ng/kg to 850 ng/kg. (See section 2.3 Dioxin/Furan Chemical Contamination for an explanation of TEQ.) The areal distribution of the dioxin/furan contamination (as indicated by TEQ calculations) found in sediments in this remedial investigation is shown in **Figure 3-3.**

Volatile Organic Chemical Contamination

As indicated in Table 3-3, only two VOCs were detected in any of the sediment samples: acetone and methyl ethyl ketone. Acetone was found in 4 of the 7 sediment samples at concentrations ranging from 350 ug/kg to 2800 ug/kg.
Methyl ethyl ketone was found in 3 of the 7 sediment samples at concentrations ranging from 84 ug/kg to 440 ug/kg. The areal distribution of the VOC contamination found in sediments in this remedial investigation is shown in **Figure 3-4.**



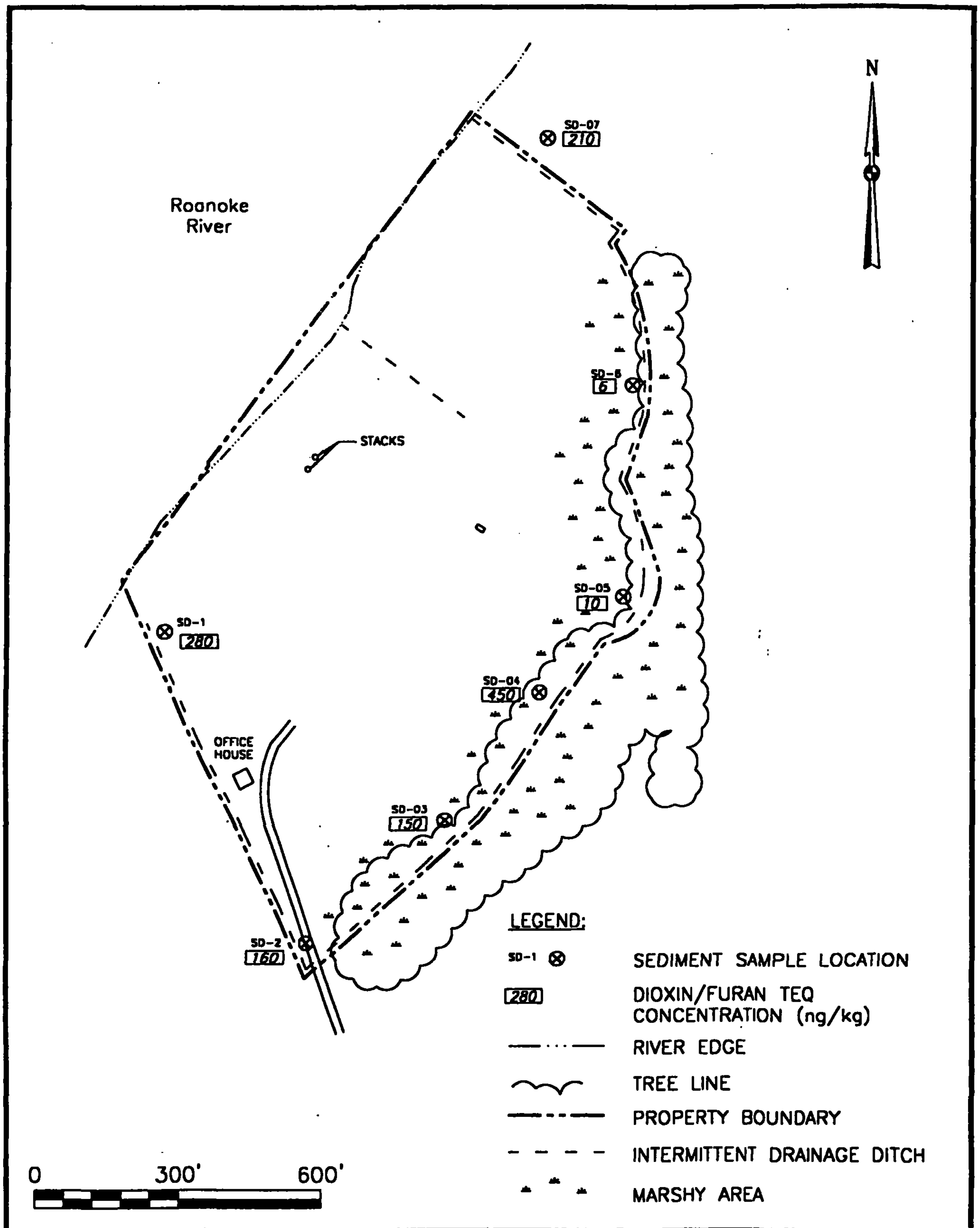
Georgia–Pacific Hardwoods
Plymouth, North Carolina

CDM

Inorganic Contaminant
Distribution in Surface Water

Figure No.
3-2

6/00



CAD FILE: SDDioFur

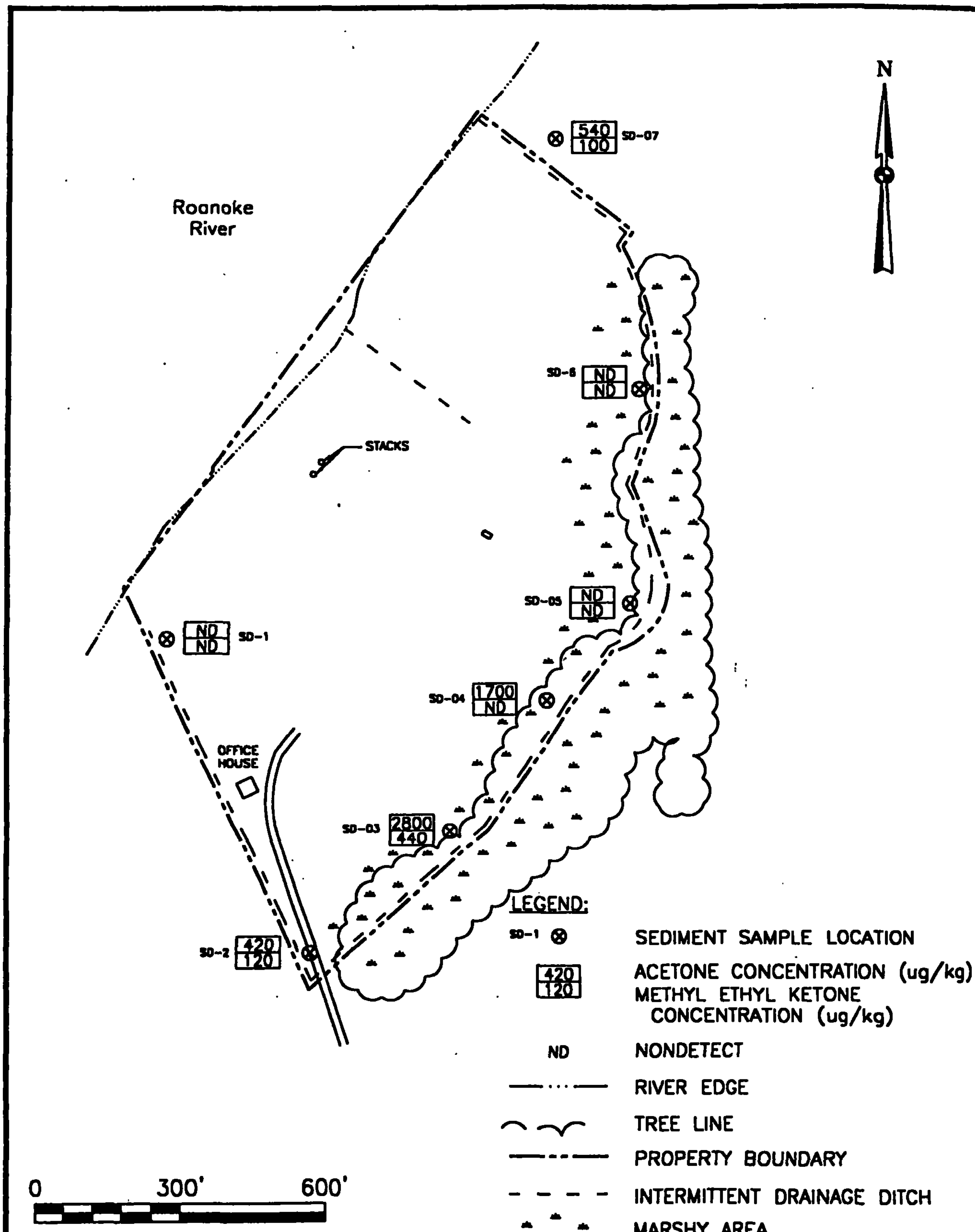
Georgia–Pacific Hardwoods
Plymouth, North Carolina

CDM

Dioxin/Furan Contaminant Distribution in Sediment

Figure No. 3-3

6/00



Georgia–Pacific Hardwoods Plymouth, North Carolina	VOC Contaminant Distribution in Sediment	Figure No. 3–4
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ACAD FILE: SDVoc

Extractable Organic Chemical Contamination

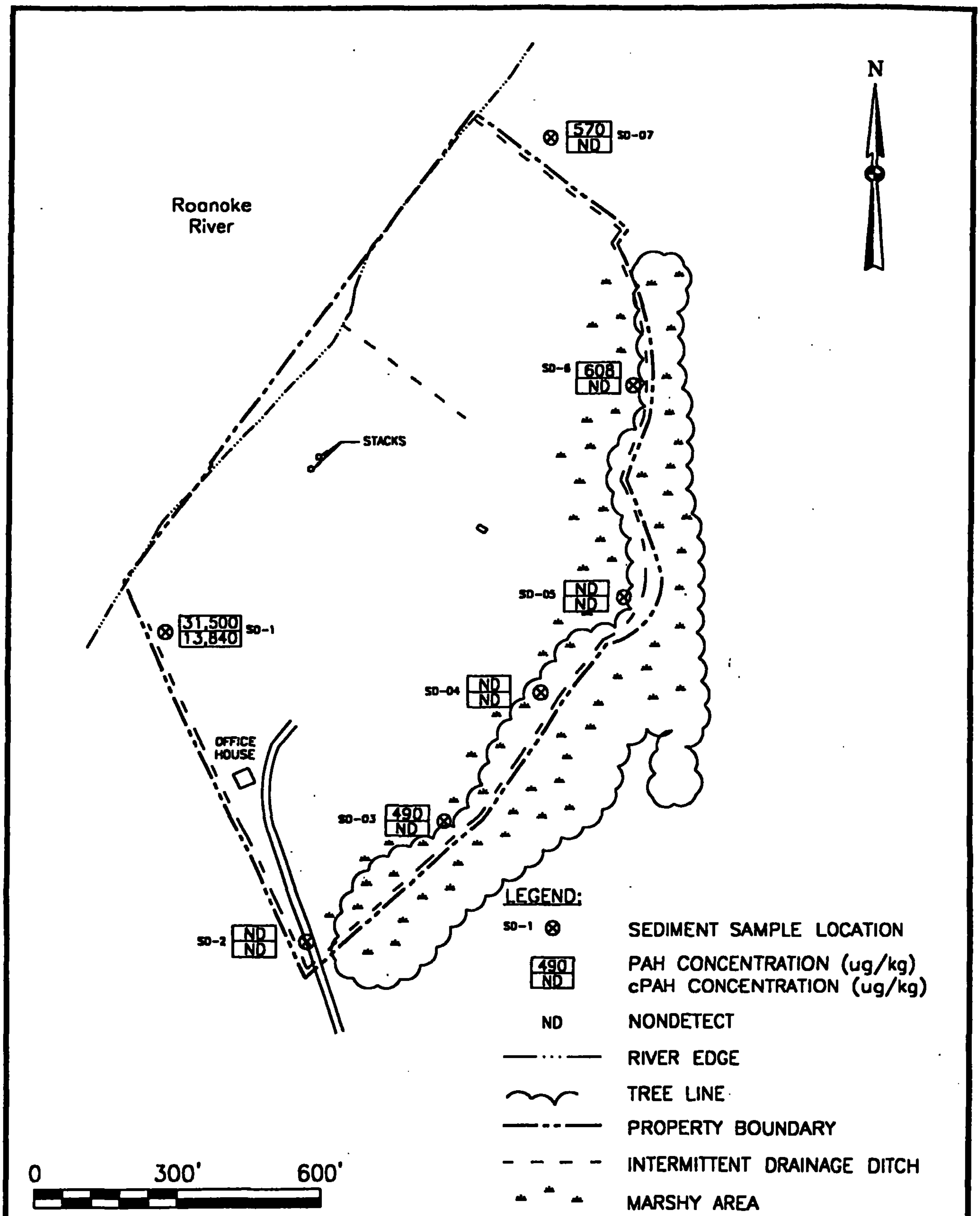
The extractable organic contamination found in the sediments appears to be significant at only one location: SD-1. All 14 of the extractable organics detected in sediments are PAHs, and at SD-1, all 14 PAHs were detected with concentrations ranging from 240 to 5600 ug/kg. The carcinogenic PAH concentrations in the SD-1 sediment sample range from 540 ug/kg to 4400 ug/kg. The total PAH concentration measured in sediment sample SD-1 is 31,500 ug/kg while the total carcinogenic PAH concentration measured is 13,840 ug/kg. A few PAHs were also detected in sediment samples SD-3, SD-6, and SD-7, but at relatively low concentrations (ranging from 71 ug/kg to 350 ug/kg), and none of the PAHs detected in these samples are carcinogenic. The areal distribution of the extractable organic chemical contamination (as indicated by total PAH and total cPAH calculations) found in sediments in this remedial investigation is shown in **Figure 3-5**. The subsurface sediments were not sampled because of the reason of evaluating only direct contact exposure to human or ecological receptors.

Pesticide Chemical Contamination

Pesticide chemical contamination in sediments at the site appears to be relatively insignificant. Three of the four pesticides detected are 4,4-DDX chemicals (4,4-DDD, 4,4-DDE, and 4,4-DDT), and they were found in only one sediment sample (SD-2) at concentrations ranging from 190 ug/kg to 540 ug/kg. Likewise, the fourth pesticide detected (Endosulfan II) was found in only one sediment sample (SD-1) at a concentration of 6.1 ug/kg. SD-2 is located in the southwestern part of the perimeter drainage ditch near the entrance gate, while SD-1 is located in the northwestern part of the perimeter drainage ditch near the Roanoke River.

Inorganic Chemical Contamination

As indicated in Table 3-4, of the 14 inorganic chemicals detected in sediments at the site, only five appear to be at concentrations which are clearly indicative of unnatural contamination. Three of these five chemicals (arsenic, lead, and zinc) were detected at concentrations significantly above typical background concentrations in several of the sediment samples. The other two chemicals (barium and iron) were detected at concentrations significantly above typical background concentrations in only one sediment sample (SD-2). The areal distribution of the arsenic, lead, and zinc contamination found in sediments in this remedial investigation is shown in **Figure 3-6**. The arsenic and zinc contamination in sediments appears to be spread throughout most of the length of the intermittent drainage ditches, having been detected at elevated concentrations in SD-1, SD-2, SD-3, SD-4, and SD-7. The detected concentrations of arsenic ranged from 3.7 mg/kg to 300 mg/kg, while the detected concentrations of zinc ranged from 12 mg/kg to 340 mg/kg. The drainage ditch areas considered to be contaminated with arsenic and zinc include the western, southwestern, and northeastern segments of the perimeter drainage ditch. The lead contamination also appears to be spread throughout much of the length of the intermittent drainage ditches, having been detected at elevated concentrations in SD-1, SD-2, SD-3, and SD-4. The detected concentrations of lead ranged from 5.7 mg/kg to 140 mg/kg. The drainage ditch areas considered to be contaminated with lead include the western and southwestern segments of the perimeter drainage ditch.



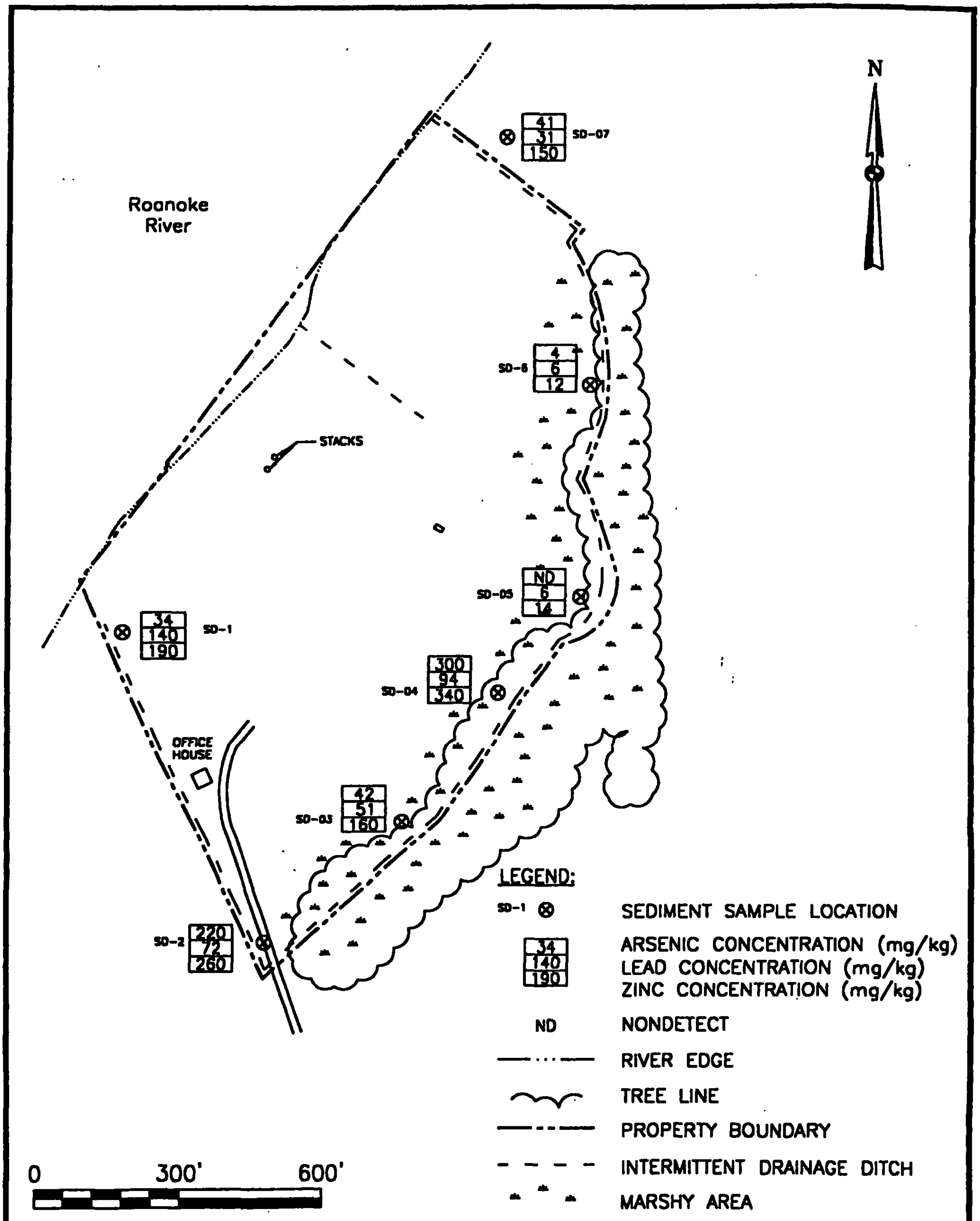
Georgia–Pacific Hardwoods
Plymouth, North Carolina

CDM

PAH Contaminant Distribution in Sediment

Figure No. 3-5

6/00



Georgia–Pacific Hardwoods Plymouth, North Carolina CDM	Inorganic Contaminant Distribution in Sediment	Figure No. 3-6 6/00

Section 4
Groundwater Sampling Investigation

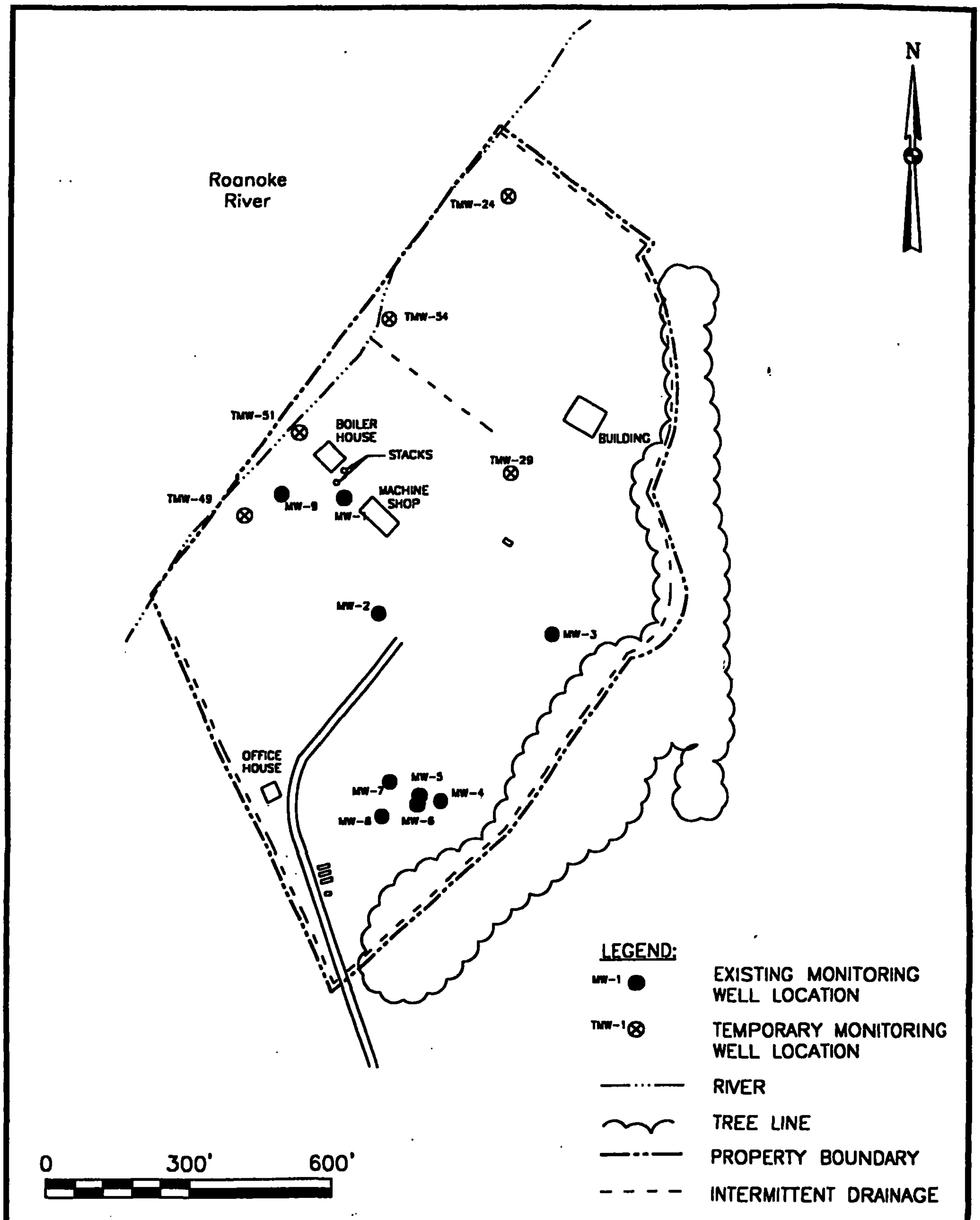
4.1 Purpose and Scope
Groundwater sampling was conducted at the site in both new temporary well points and existing shallow monitor wells to fully assess the types and concentrations of contaminants present in the underlying shallow aquifer, and to determine the extent and magnitude of groundwater contamination in the shallow aquifer at the site. A total of five temporary well points were installed at the approximate locations shown in **Figure 4-1** to supplement the nine existing monitor wells installed previously at the site (also shown in Figure 4-1) prior to this remedial investigation. Note that the nine existing monitor wells were all constructed with 2-inch diameter PVC.

4.2 Methods
One groundwater sample was collected from each of the five temporary well points and the nine existing monitor wells identified above. These samples were sent to a CLP laboratory for complete TCL/TAL analyses. Just prior to sampling of each monitor well, field measurements of the well depth, depth to water, groundwater temperature, pH, conductivity, and turbidity were taken, and the results are provided in **Table 4-1**. All groundwater samples collected were grab samples and were collected according to the procedures established in the *Remedial Investigation Work Plan* (EPA, 1998) for the Georgia Pacific Site, and Section 4 of EPA's *Environmental Investigations Standard Operating Procedures and Quality Assurance Manual* (EPA, 1996).

4.3 Summary
The concentrations of chemicals detected in the groundwater samples collected at the site are summarized in **Table 4-2**. Note that for the purpose of summarizing, only chemicals detected at least once in groundwater and their measured concentrations are presented in the summary table. Complete analytical results for the CLP laboratory analyses performed are provided in Appendix A. In Table 4-2, those concentrations considered to reflect a valid detection of unnatural contamination are printed in bold italicized text to distinguish them from the other measurements.

Since organic chemicals are not believed to be naturally occurring in groundwater in this area, any detection of an organic chemical was considered to be unnatural contamination. For the inorganics, since no background groundwater samples were collected at the site, the concentrations were compared to typical background concentrations at other North Carolina sites in an attempt to distinguish unnatural contamination from natural chemical concentrations.

As indicated in **Table 4-2**, a wide variety of chemicals were detected in the groundwater samples collected at the site. The spectrum of chemicals detected in at least one groundwater sample from this area included one volatile organic, five extractable organics, and 15 inorganics.



Georgia-Pacific Hardwoods Plymouth, North Carolina	Well Location Map	Figure No. 4-1
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TABLE 4-1
GROUNDWATER SAMPLING FIELD MEASUREMENTS
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

Well Number	Total Depth (ft)	Depth to Water (ft)	Temperature (°C)	pH	Conductivity (umhos)	Turbidity (NTUs)
MW-1	19.3	7.6	18.9	6.5	717	5.3
MW-2	15.3	7.8	21.1	6.6	447	6.7
MW-3	17.4	8.4	18.4	6.2	1491	53.4
MW-4	18.2	5.9	20.0	6.5	1196	2.5
MW-5	42.3	8.6	17.5	6.8	488	3.0
MW-6	17.1	6.0	19.6	6.5	434	5.9
MW-7	17.3	5.8	20.6	6.3	807	5.5
MW-8	16.2	5.3	20.7	6.3	601	27.6
MW-9	15	8.1	19.7	6.7	1183	4.4
TW-24	9	---	19.2	7.5	1892	132
TW-29	9	---	22.0	6.2	736	12.3
TW-49	10	---	18.9	5.1	1169	394
TW-51	---	---	12.3	5.4	1085	408
TW-54	7.5	---	---	6.5	---	---

TABLE 4-2

GROUNDWATER SAMPLING SUMMARY
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-6 (Dup.)	MW-7
VOLATILE ORGANICS								
TOLUENE	***1 J***	10 U	10 U	10 U	10 U	10 U	10 U	10 U
EXTRACTABLE ORGANICS								
2-METHYLNAPHTHALENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
ACENAPHTHENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
DIBENZOFURAN	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
FLUORENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
PHENANTHRENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
INORGANICS								
ALUMINUM	70 U	140 U	710	70 U	30 U	150 U	40 U	240 U
ARSENIC	***140***	5 J	***140***	***990***	4 U	4 U	4 U	***69***
BARIUM	200	48	250	490	30	87	74	170
CALCIUM	96000	58000	160000	130000	45000	51000	45000	92000
CHROMIUM	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
COBALT	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
COPPER	19 J	11 J	7 J	10 J	17 J	14 J	11 J	6 J
IRON	13000	1800	38000	35000	1400	15000	13000	55000
LEAD	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
MAGNESIUM	9800	7500	29000	21000	4300	4700	4100	7100
MANGANESE	260	740	***4700***	***3100***	62	350	300	***2300***
POTASSIUM	22000 J	4700 J	24000 J	30000 J	2700 J	6200 J	5200 J	12000 J
SODIUM	4400	5300	19000	26000	32000	17000	15000	7100
VANADIUM	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
ZINC	41	19 J	18 J	23	21	21	24	25

Data Qualifiers

J-Estimated value.
U-Material was analyzed for but not detected. The number is the minimum quantitation limit.

Concentrations presented in ug/L. Concentrations printed in bold italicized text are considered to reflect a valid detection of unnatural contamination.

TABLE 4-2 (cont.)

GROUNDWATER SAMPLING SUMMARY
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

CHEMICAL	MW-8	MW-9	TW-24	TW-29	TW-49	TW-51	TW-54
VOLATILE ORGANICS							
TOLUENE	10 U	10 U	10 U	10 U	10 U	10 U	10 U
EXTRACTABLE ORGANICS							
2-METHYLNAPHTHALENE	10 U	10 U	10 U	10 U	10 U	10 U	***3 J***
ACENAPHTHENE	10 U	10 U	10 U	10 U	10 U	10 U	***1 J***
DIBENZOFURAN	10 U	10 U	10 U	10 U	10 U	10 U	***1 J***
FLUORENE	10 U	10 U	10 U	10 U	10 U	10 U	***2 J***
PHENANTHRENE	10 U	10 U	10 U	10 U	10 U	10 U	***2 J***
INORGANICS							
ALUMINUM	2200	50 U	1700	1100	16000	660	24000
ARSENIC	***22***	***28***	***26***	***80***	***20***	4 U	***27***
BARIUM	290	140	480	110	590	260	460
CALCIUM	67000	110000	220000	74000	140000 J	110000	130000
CHROMIUM	2 J	2 U	2 U	2 U	17	2 U	31
COBALT	2 U	2 U	5 J	8 J	4 J	2 U	48 J
COPPER	9 J	12 J	2 J	7 J	30	12 J	27
IRON	30000	8900	67000	35000	36000	12000	46000
LEAD	3 U	2 U	2 U	2 U	40	2 U	28
MAGNESIUM	9200	33000	46000	16000	19000	18000	15000
MANGANESE	1300	1600	630	***2200***	780	1700	500
POTASSIUM	8500 J	72000 J	30000 J	18000 J	49000 J	68000 J	30000 J
SODIUM	12000	13000	16000	7400	15000	50000	18000
VANADIUM	5 J	2 U	3 J	2 U	33 J	2 U	52
ZINC	19 J	22	15 J	20 J	89	27	72

Data Qualifiers

J-Estimated value.
U-Material was analyzed for but not detected. The number is the minimum quantitation limit.

Concentrations presented in ug/L. Concentrations printed in bold italicized text are considered to reflect a valid detection of unnatural contamination.

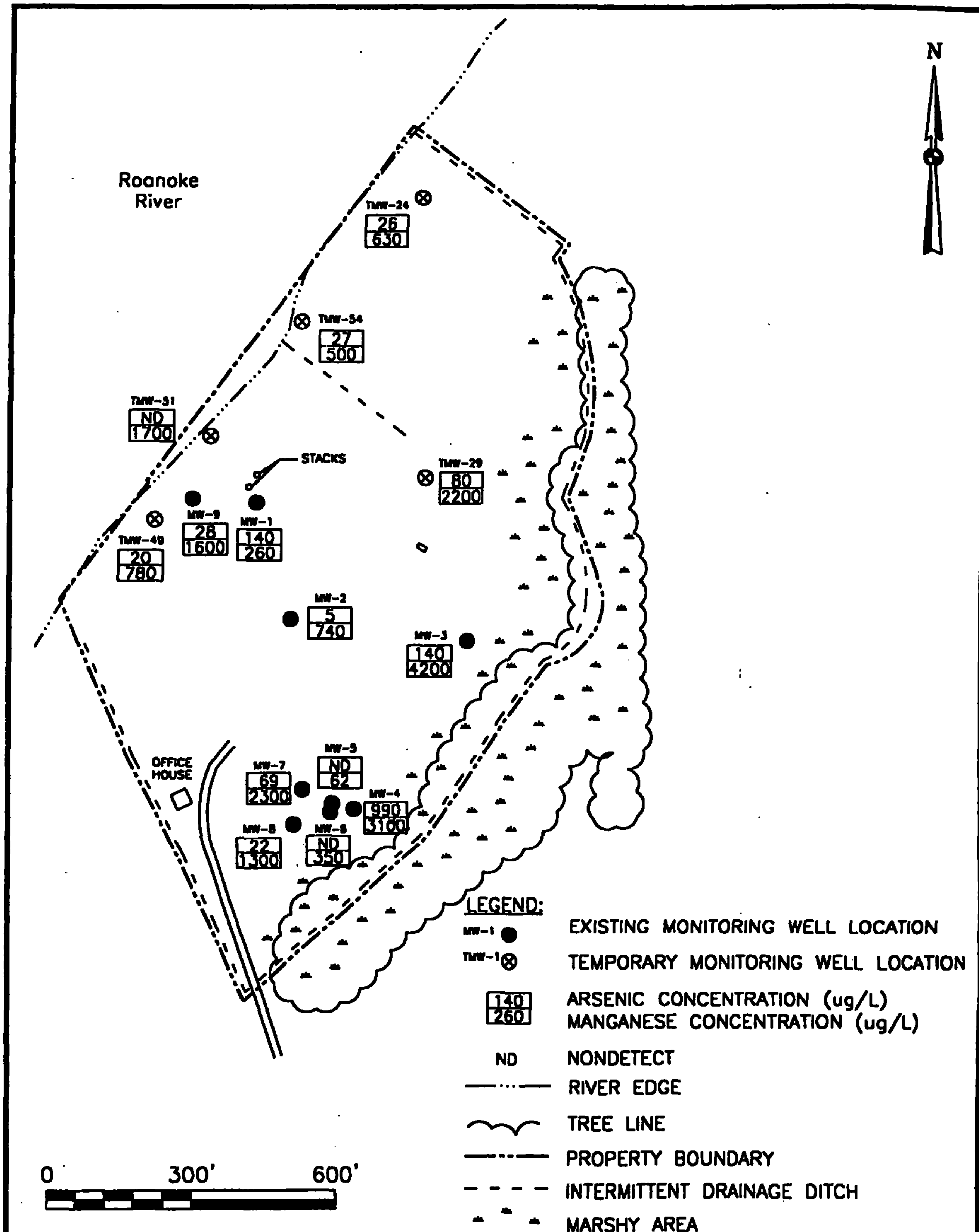
Volatile Organic Chemical Contamination
Volatile organic chemical contamination in groundwater at the site is relatively insignificant. The only VOC detected in groundwater was toluene and it was detected in only one monitor well (MW-1) at an estimated concentration of 1 ug/l. MW-1 is located in the Former Raw Timber Processing Area. Note that no VOCs were detected in any of the monitor wells located in or near the alleged TCE spill area.

Extractable Organic Chemical Contamination
Extractable organic chemical contamination in groundwater at the site is also relatively insignificant. The five extractable organics detected are all PAHs, and they were detected in only one well (TW-54) at concentrations ranging from only 1 ug/l to 3 ug/l. TW-54 is located near the Roanoke River in the Former Raw Timber Receiving Area. It should be noted that when well point TW-54 was installed, the drillers experienced an extremely strong creosote odor emanating from the hole and soils after drilling to a depth of 5 feet.

Inorganic Chemical Contamination
As indicated in Table 4-2, of the 15 inorganic chemicals detected in groundwater at the site, only two appear to be at concentrations which are clearly indicative of unnatural contamination. These two chemicals, arsenic and manganese, were detected at concentrations significantly above typical background concentrations in several wells. The areal distribution of the arsenic and manganese contamination found in groundwater in this remedial investigation is shown in **Figure 4-2**. Some of the other inorganics detected (i.e., aluminum, chromium, cobalt, copper, lead, vanadium, and zinc) were found at slightly elevated concentrations in well points TW-49 and TW-54 when compared to the other wells onsite, but the concentrations measured in these samples are within the realm of possible background concentrations, particularly when considering the high turbidity of the TW-49 sample and the potential high turbidity of the TW-54 sample. The turbidity of the sample from TW-54 was not measured, but well point samples typically are very turbid due to the inability to develop a well point.

The arsenic contamination in groundwater appears to be spread throughout much of the site, having been detected at elevated concentrations in MW-1, MW-3, MW-4, MW-7, MW-8, MW-9, TW-24, TW-29, TW-49, and TW-54. The detected concentrations of arsenic ranged from an estimated 5 ug/l to 990 ug/l. The highest concentration of arsenic was found in the area of the alleged TCE spill, but other high concentrations of arsenic (above its 50 ug/l MCL) were also found in the Former Raw Timber Processing Area (MW-1) and the eastern part of the Former Finished Wood Products Storage Area/Outerbanks Contractors Asphalt Mixing Plant Area (MW-3 and TW-29).

The manganese contamination appears to be concentrated in the Former Finished Wood Products Storage Area/Outerbanks Contractors Asphalt Mixing Plant Area, having been detected at elevated concentrations in MW-3, MW-4, MW-7, and TW-29. The detected concentrations of manganese ranged from 62 ug/l to 4700 ug/l. Note that no well had a concentration of manganese below its 50 ug/l SMCL indicating



Georgia–Pacific Hardwoods Plymouth, North Carolina	Inorganic Contaminant Distribution in Groundwater	Figure No. 4-2
CDM consulting · engineering · construction · operations		6/00

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that background concentrations of manganese in the surficial aquifer are likely above the SMCL. Some subsurface soil descriptions were recorded during the installation of the temporary well points installed during this RI. Four descriptions from temporary well points; TMW-29, TMW-49, TMW-54, and TMW-24 were recorded in the logbook. The lithologic descriptions and associated depths were basically the same and included the following. Surface to 1-foot varied depending on the area and consisted of asphalt, concrete, gravelly debris, or brown soil. Gray sand was typical encountered from 1 to 9 or 10 feet. Water was encountered at 6-feet at TMW-54 (nearest the river) and 8-feet on the others. These temporary well points did not go any deeper than 10 feet below land surface.

Depth to water was measured on all the existing monitor wells before sampling as provided on Table 4-1 above. A groundwater potentiometric map could not be generated since well casing elevations above mean sea level were not available for the site. However, based on the topography, the shallow water levels recorded, and the existence of the Roanoke River adjacent to the site, it may be assumed that the shallow groundwater flow is influenced by and likely flows toward the river.

Section 5
Contaminant Fate and Transport Analysis

An evaluation of the environmental fate and transport of site-related contaminants is important in determining the potential for exposure to the contaminants. There are several mechanisms by which contaminants may migrate at the Georgia Pacific Site. Migration into the air can occur via volatilization or dust generation. Migration into groundwater can occur by percolation of infiltrating rainwater or groundwater flow through waste materials or contaminated soils. Transport to surface waters can occur via surface water runoff, and/or through groundwater discharge. The mechanisms of migration for the contaminants of concern detected at the site (see Section 6) are discussed in more detail below. Estimates of the physical and chemical properties of the contaminants of concern which may affect contaminant migration are presented in **Table 5-1**. Note that the properties for the dioxins/furans are represented by the properties of 2,3,7,8-TCDD (one particular dioxin) in Table 5-1. Some variation in properties is expected between each of the individual dioxins and furans, but the variations are not expected to be significant. The general persistence of the contaminants of concern is also discussed below.

5.1 Contaminant Migration

5.1.1 Air Migration

Generally, volatilization from soil and/or water into air may be an important transport mechanism for the organic chemicals with Henry's Law Constants greater than 10^{-5} atm-m^3/mole and molecular weights less than 200 g/mole. None of the organic contaminants of concern found at the site meet these criteria, and thus, volatilization of the contaminants of concern is not considered an important release mechanism at this site.

Fugitive dust emissions from wind or mechanical disturbances may occur from unpaved or unvegetated areas of the site. The environmental factors that influence wind erosion are wind speed, moisture content, vegetative cover, and soil composition. Because the environmental factors at the Georgia Pacific Site are at times and places conducive to wind erosion, each of the contaminants of concern detected in surface soil is susceptible to migration via fugitive dust generation.

5.1.2 Surface Water Migration

Contaminant migration into the Roanoke River, a major surface water body at the Georgia Pacific Site, may occur through surface water runoff, and/or through groundwater discharge. Upon reaching this surface water pathway, contaminants may remain in the water column, volatilize, or sorb to bottom or suspended sediments. Volatile organic contaminants tend to quickly volatilize into the atmosphere upon reaching surface waters and for this reason are rarely observed at detectable concentrations in surface water samples. Nevertheless, even though there are no volatile organic contaminants of concern at the site, it should be noted that during this RI, one volatile organic chemical (acetone) was detected in both surface water and sediment samples collected from the intermittent drainage ditches which lead to the Roanoke River.

TABLE 5-1
ESTIMATED PHYSICAL AND CHEMICAL PROPERTIES OF THE CONTAMINANTS OF CONCERN
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

Contaminant of Concern	Molecular Weight (g/mol)	Solubility at 25° C (mg/l)	Henry's Constant (atm-m^3/mol x 10^{-5})	K_{oc} (ml/g)	K_{ow} (ml/g)	K_d (ml/g)
Inorganics						
Aluminum	NA	NA	NA	NA	NA	--
Arsenic	NA	NA	NA	NA	NA	200[4]
Barium	NA	NA	NA	NA	NA	0.5[4]
Chromium	NA	NA	NA	NA	NA	30[4]
Iron	NA	NA	NA	NA	NA	800[4]
Lead	NA	NA	NA	NA	NA	16,000[4]
Manganese	NA	NA	NA	NA	NA	750[4]
Vanadium	NA	NA	NA	NA	NA	--
Extractable Organics						
Benzo(a)anthracene	228[1]	0.014[2]	0.066[1]	1,400,000[1]	140,000[2]	530[3]
Benzo(b &/or k)fluoranthene	252[1]	0.00055[2]	1.2[1]	550,000[1]	3,700,000[2]	14,000[3]
Benzo-a-pyrene	252[1]	0.0038[2]	0.24[1]	400,000[1]	1,100,000[2]	4200[3]
Dibenzo(a,h)anthracene	278[1]	0.0005[2]	0.00073[1]	1,700,000[1]	930,000[2]	3500[3]
Indeno(1,2,3-cd)pyrene	276[1]	0.62[2]	3.0×10^{-15}[1]	31,000,000[1]	46,000,000[2]	170,000[3]
Other Organics						
PCB-1254	327[1]	0.012[2]	230[1]	400,000[1]	1,100,000[2]	4200[3]
PCB-1260	370[1]	0.0027[2]	710[1]	2,600,000[1]	14,000,000[2]	53,000[3]
2,3,7,8-TCDD (Dioxin)	322[1]	0.2[1]	5.4×10^{-18}[1]	4,600,000[1]	2,000,000[1]	7600[3]

TABLE 5-1 (cont.)

ESTIMATED PHYSICAL AND CHEMICAL PROPERTIES OF THE CONTAMINANTS OF CONCERN
GEORGIA PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

Notes:

K_{oc} - Organic carbon partition coefficient
K_{ow} - Octanol/water partition coefficient
K_d - Soil/water partition coefficient
NA - Not Applicable
-- - No Data Available

Sources:

1) Montgomery and Welkom (1989)
2) Walton (1984)
3) Based on a typical fraction of organic carbon in soil and the following equation (Walton, 1984):

$$K_d = 0.63 * f_{oc} * K_{ow}$$

f_{oc} = fraction of organic carbon in soil (0.006)

4) Based on data presented in Thibault, et al. (1990)

The dioxins/furans and other organics with low water solubilities and high K_{oc} values such as PAHs, pesticides, and PCBs will tend to associate with sediments as opposed to volatile organics and extractable organics with high water solubilities and low K_{oc} values, which tend to stay in the water column. All the organic contaminants of concern at this site have low water solubilities and high K_{oc} values and based on the surface water and sediment sample results obtained in this remedial investigation, it appears that these contaminants are mostly sorbing to sediment particles, as expected. This does not preclude the migration of these contaminants to the Roanoke River, however, as the contaminated sediments may be conveyed to and within the Roanoke River via sediment transport mechanisms during storm events.

The behavior of the inorganic contaminants of concern in surface water is affected by pH, temperature, and hardness. Inorganic compounds can occur in aquatic systems as dissolved ions, dissolved complexes with organic and inorganic chemicals, colloids, or particulates. The solubility and mobility of the metal inorganic contaminants is enhanced by their ability to form complexes with humic and fulvic acids, carbonates, hydroxides, and phosphates. Based on the surface water and sediment sample results obtained in this remedial investigation, it appears that several inorganic chemicals are migrating to surface waters at the site, and that the geochemical processes in the surface waters allow for some of these contaminants to both remain in the water column and sorb to sediments, while others are mostly sorbed to sediment particles. Again, however, the sorbing of contaminants to sediment particles does not preclude the migration of these contaminants to the Roanoke River, as the contaminated sediments may be still be conveyed to and within the Roanoke River via sediment transport mechanisms during storm events.

5.1.3 Soil Migration

Contaminants present in surface and subsurface soils may leach to the underlying aquifer. Many factors influence the rate of contaminant movement through soils. These include the physical/chemical properties of the contaminants (e.g., solubility, density, viscosity, K_{oc}, K_{ow}), and the physical/chemical properties of the environment (e.g., rainfall percolation rate, soil permeability, porosity, particle size distribution, organic carbon content). Because all these factors can affect the rate of contaminant movement through soils, it is very difficult to predict such movement. However, based on the data collected in this remedial investigation some gross generalizations of this movement can be made.

Sorption of a chemical to soil particles is the only significant hinderance of contaminant migration in soils at the Georgia Pacific Site. If it were not for sorption, rainfall recharge and soil permeability at this site are high enough such that all the contaminants of concern would readily move through the soils. Sorption of contaminants is generally described by their distribution coefficients (K_d). The distribution coefficient can be expressed as:

$$K_d = \frac{\text{mass of contaminant on the solid phase per mass of solid phase}}{\text{concentration of solute in solution}}$$

5.2 Contaminant Persistence

Persistence is the measure of how long a chemical will exist in the environment before it degrades or transforms, either chemically or biologically, into some other chemical. Some of the factors which affect the persistence of a chemical include the state of the chemical, the availability of the chemical, exposure to sunlight, oxygen availability, the types and quantities of microorganisms present, availability of nutrients, temperature, pH, as well as the presence of other chemicals which may inhibit or enhance degradation. Usually, persistence is expressed in terms of a chemical half-life and can be on the order of days, weeks, or years.

Because of the many complex factors which may affect persistence, the actual rate of chemical degradation is very difficult to predict for a given chemical at a given site, especially without the benefit of any degradation data collected from site-specific field studies. However, a qualitative evaluation of the potential for degradation of a chemical can be made based on the results of laboratory and/or field studies conducted previously at other locations. Such a qualitative evaluation was conducted for the contaminants of concern detected at the Georgia Pacific Site, and the results are summarized in **Table 5-2**. Again, note that the degradation potential for the dioxins/furans are represented by the degradation potential for 2,3,7,8-TCDD in Table 5-2. Some variation in the degradation potential is expected between each of the individual dioxins and furans, but the variations are not expected to be significant. In this table, the degradation potential for each of the contaminants of concern is indicated for the following three environmental media categories:

- <u>Atmospheric Degradation</u> - A chemical released to the atmosphere may degrade by such processes as photolysis and/or reactions with the hydroxyl radical, ozone, or other chemicals present.

- <u>Aquatic Degradation</u> - A chemical released to fresh, marine, or estuarine surface waters may degrade by such processes as photolysis, hydrolysis, oxidation, and/or biodegradation.

- <u>Terrestrial Degradation</u> - A chemical released to soil or groundwater may degrade by such processes as hydrolysis, oxidation, and/or biodegradation.

As indicated in Table 5-2, of all the contaminants of concern at the Georgia Pacific Site, the metals have the least potential to degrade in all media and therefore will likely persist the longest at the site. In fact, these contaminants, under ordinary conditions, will likely persist indefinitely (for all practicable purposes). Other chemicals which also have low degradation potential include the PCBs. All the other contaminants of concern (i.e., the dioxins/furans and the PAHs) generally have low to moderate potentials for degradation, unless released to the atmosphere, in which case all the PAHs generally have a high potential for degradation.

TABLE 5-2
ESTIMATED DEGRADATION POTENTIAL OF THE CONTAMINANTS OF CONCERN[1]
GEORGIA-PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

Contaminant of Concern	Atmospheric Degradation Potential	Aquatic Degradation Potential	Terrestrial Degradation Potential
Inorganics			
Aluminum	Low	Low	Low
Arsenic	Low	Low	Low
Barium	Low	Low	Low
Chromium	Low	Low	Low
Iron	Low	Low	Low
Lead	Low	Low	Low
Manganese	Low	Low	Low
Vanadium	Low	Low	Low
Extractable Organics			
Benzo(a)anthracene	High	Low/Moderate	Low/Moderate
Benzo(b &/or k)fluoranthene	High	Low/Moderate	Low/Moderate
Benzo-a-pyrene	High	Low/Moderate	Low/Moderate
Dibenzo(a,h)anthracene	High	Low/Moderate	Low/Moderate
Indeno(1,2,3-cd)pyrene	High	Low/Moderate	Low/Moderate
Other Organics			
PCB-1254	Low/Moderate	Low	Low
PCB-1260	Low/Moderate	Low	Low
2,3,7,8-TCDD (Dioxin)	Moderate	Low/Moderate	Low/Moderate

TABLE 5-2 (cont.)

ESTIMATED DEGRADATION POTENTIAL OF THE CONTAMINANTS OF CONCERN[1]
GEORGIA PACIFIC SITE
PLYMOUTH, NORTH CAROLINA

[1]Qualitative Evaluations Made Based on Information Obtained from the Following Sources:

1) U.S. Department of Health and Human Services Toxicological Profiles
2) *Fate and Exposure Data For Organic Chemicals*, (Howard, 1989)
3) *Handbook of Environmental Degradation Rates*, (Howard, 1991)
4) Hazardous Substance Data Bank maintained by the National Library of Medicine in Bethesda, Maryland

Section 6
Quality Assurance Report

6.1 Controlling Documents

The primary objective in instituting quality control procedures is to ensure that staff collect and record data in a uniform manner and that data are of consistently high quality. Data are thus more likely to be accurate and can be interpreted with a high degree of confidence. In order to collect and record data in a uniform manner, controlling documents that described and specified quality assurance/quality control (QA/QC) procedures for the field investigation were prepared and/or used. The documents used to guide and direct procedures throughout the investigation included:

> Environmental Investigations Standard Operating Procedures and Quality Assurance Manual, U.S. EPA Region IV, Science and Ecosystem Support Division, May 1996 and 1997 revisions
>
> U. S. EPA Region 4 Remedial Investigation Work Plan Georgia-Pacific Hardwood Sawmill Plymouth, North Carolina, Science and Ecosystem Support Division, August 1998
>
> Final Work Plan for Remedial Investigation Georgia-Pacific Hardwood Sawmill Site Plymouth, North Carolina, CDM Federal Programs Corporation, January, 1999
>
> Guidance for the Data Quality Objectives process, EPA 600/R-96/055, September 1994

The U. S. EPA Work Plan specified and described all QA, QC, analytical, data management, auditing and reporting procedures for this investigation. In addition, the U. S. EPA Work Plan established the DQO levels for field and analytical data using the DQO levels defined in EPA 600/R-96/055 September 1994. For this investigation, field measurements such as pH, temperature, NTUs, conductivity, water level, and ground survey measurements were considered DQO screening data. The contaminant analysis data of surface water, sediment, soil, and groundwater provided by Contract Laboratory Program (CLP) laboratories and validated by Environmental Protection Agency (EPA) Science and Ecosystem Support Division (SESD) were considered definitive data.

By providing a framework for sample collection, decontamination, field quality control, sample identification, chain-of-custody and sample handling procedures, the controlling documents help ensure that high quality data is collected and data comparability is enhanced.

6.2 Field Investigation

6.2.1 Groundwater Sampling

The work plan had called for the installation of ten temporary monitoring wells and then collection of groundwater from the temporary well points and from five existing monitor wells. Temporary monitoring well installation and sampling was performed in accordance with the specifications in the Work Plan except that only five temporary monitor wells were completed due to conditions encountered at the site. Additionally, nine of the permanent wells were sampled.

As specified in the Work Plan, the samples were collected with a peristaltic pump. All groundwater samples collected were sent to CLP laboratories and analyzed according to DQO definitive data requirements.

6.2.1.1 Water Level Measurements

Water level measurements followed the procedures specified in the work plan. Field measurements associated with this activity were conducted in accordance with DQO screening data requirements.

6.2.1.2 Field Parameter Measurements

Field parameters (pH, specific conductivity, temperature, and turbidity) were measured on groundwater during well purging. Daily calibration of the monitoring instruments was performed and recorded in the field logbooks. In addition, post calibration checks were performed on the instruments following the days' activities. Instrument calibration and measurements performed appeared accurate and acceptable and no instrument malfunctions were reported.

6.2.2 Surface Water/Sediment Sampling

Surface water and sediment samples were collected according to procedures specified in the work plan. However, instead of the six surface water and six sediment samples planned, three surface waters and seven sediments samples were collected. Surface water was not available at all locations to collect samples. All samples were sent to CLP laboratories and analyzed according to DQO definitive data.

6.2.5 Soil Sampling

USEPA divided the site into 54 grids and collected one five-aliquot composite surface sample from each grid. Samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds(SVOCs), pesticides, polychlorinated biphenyls (PCBs), metals, and dioxin/dibenzofuran (approximately 80% of the samples were analyzed for dioxin/dibenzofuran). In addition, grab subsurface samples were collected at the center of each grid at a depth of 18"-24" bgs, and from grids 25 through 54 at a depth of 36" to 54" bgs. The grab samples were analyzed for VOCs, SVOCs, pesticides, PCBs, metals, and dioxin/dibenzofuran (approximately 80% of the samples were analyzed for dioxin/dibenzofuran). Two additional soil samples were collected onsite that were not associated with the 54 intially established grids. One sample was collected in an area just west of Grid 17, designated as sample GP055SLA. Another sample consisted of ash collected near the boiler house, and was designated as sample GP056SLA. These deviations occurred due to conditions encountered at the site. For example, some of the five point aliquots could not be collected due to buried obstructions.

Twenty offsite locations were proposed for surface soil sample collection. However, only 14 locations were identified and samples were collected for volatiles and extractable organics, metals, pesticides, PCBs, dioxins, and furans.

6.3 Field Quality Control Procedures

All data was collected as specified in the work plan. Field measurements were performed in accordance with procedures specified in the work plan. All monitoring instruments were calibrated either before each use, at the beginning of each field day, or at the frequency specified for each instrument. All sampling equipment that came in contact with sample media was decontaminated as specified in the work plan before each sample was collected.

All sample collection, chain-of-custody, and sample shipping procedures were carried out as specified in the work plan. As part of the sample collection and analysis effort, field quality control samples were prepared to monitor the performance of the CLP laboratories and the offsite laboratories, and to check the field sampling procedures. A description of each QC sample type and QC sample results are discussed in Section 6.5.

6.4 Data Validation

6.4.1 CLP Laboratory Analysis

All DQO Level IV data collected under the Georgia-Pacific remedial investigation were validated by EPA Region IV SESD using EPA CLP data validation procedures. The validation process involves review for compliance with holding times, instrument calibration, method and laboratory blanks, instrument tuning and performance data, and constituent quantification. Results of duplicate, matrix spike and other QC samples are used to assess precision and accuracy of the analytical data and potential matrix effects. The following qualifier flags are typically used by SESD to qualify data.

A-Average Value
NA-Not Analyzed
NAI-Interferences
J-Estimated Value
N-Presumptive Evidence of Presence of Material
K-Actual Value Is Known To Be Less Than Value Given
L-Actual Value Is Known To Be Greater Than Value Given
U-Material Was Analyzed For, But Not Detected, The Number Is The Minimum Quantitation Limit
R-QC Indicates That Data Is Unusable, Compound May or May Not Be Present; Resampling and Reanalysis is Necessary For Verification

The purpose of validating the data is to allow the data user to interpret and use the data with varying degrees of confidence depending on how the data are qualified (e.g. unqualified, estimated, or rejected).

For this investigation the data validation for both organic and inorganic analyses revealed that the overall data package can be accepted with confidence. However some data had to be rejected. Some results were rejected due to detection of analytes or compounds in blanks or insufficient recovery of spiked samples. For organics, in each media sampled, the "U" qualifier was applied on most data due to the contaminant being analyzed for but not detected at the minimum quantitation limit. The "J" qualifier was generally applied due to the sample containing those compounds less than the quantitation limits. Some extractable PAHs in samples were flagged with "J" due to low performance evaluation sample recovery for those PAHs.

For the inorganics, the soils and sediment samples analyses resulted in actual levels of metals in most samples so no qualifiers were applied. For the aqueous samples analyzed much of the data was qualified "U" due to the those metals not detected at the minimum quantitation limit. For nonaqueous samples, the "U" was applied when the percent relative standard deviation %RSD greater than 20% for Inductively Coupled Plasma Emission Spectoscopy (ICP) multiple exposures and reported results were greater than instrument detection limit (IDL), but less than contract required detection limit (CRDL) or there was some baseline instability. The "J" qualifier was applied to some of the metals analyzed for a multitude of reasons which include matrix spike recovery and matrix duplicate out of control limits, and the Contract Laboratory Program Statement of Work (CLP SOW) requires analysis of two times CRDL standard for ICP analysis.

6.5 Data Evaluation

As part of the overall data review, the results of field QC samples were examined so that effects of field procedures on data quality could be evaluated. Field QC samples included EPA blanks and spikes, duplicate samples, trip blanks, equipment rinsates, material blanks, and water blanks. In addition, sampling personnel collected sufficient volume for the CLP laboratories to analyze matrix spike and matrix spike duplicate samples.

6.5.1 EPA Spikes

Spike sample ampules were shipped from SESD to the CLP laboratories. The laboratory provided full CLP documentation for spike sample analyses. Spike samples were submitted for liquid environmental matrices during the subject week of sample collection. The spike samples submitted to the CLP laboratories were analyzed for TAL and TCL parameters. The sample results were used by EPA to check adherence to procedures by the CLP laboratories.

These samples were submitted to the respective CLP laboratories on a blind basis. Fictitious station numbers were used on the traffic report forms; the CLP laboratories did not know which samples were blanks and spikes. These samples were identified as such only on the copy of the traffic report forms that were returned to SESD and Sample Management Office (SMO).

6.5.1 EPA Inorganic Blank

In addition to the EPA Spike, SESD also prepared a blind inorganic blank which is sent to the field personnel to be shipped along with the field collected samples to the CLP inorganic laboratories. It is given a ficticious sample location and is reported by the CLP with the field sample data. SESD evaluated the CLP analytical results and did not report any false positives.

6.5.2 Trip Blanks

Trip blanks (for VOCs only) accompanied the shipments of samples to the CLP laboratory whenever coolers contained samples for VOA analyses. Trip blanks were prepared for both aqueous and soil/sediment type samples. Trip blanks are used to show contamination potentially having occurred during sample handling or storage. The trip blank was prepared by the field team prior to the sampling event and kept with the investigative samples throughout the sampling event. It was then packaged for shipment with the other samples and sent for analysis. Trip blank results are presented in the Appendix A Quality Assurance Data. Only a few detections were noted in the trip blanks analytical results. All detections were qualified "U" or as a low "J" value. These detected constituents were generally common laboratory contaminants or metal salts are not considered site contaminants of concern.

6.5.3 Equipment Rinsates

Rinsate blanks were obtained by running organic-free water over sampling equipment after it had been decontaminated. These samples were used to determine if cleaning procedures were adequate. Equipment rinsate samples were collected from decontaminated soil/sediment sampling, groundwater sampling, and surface water sampling equipment. Rinsate blank results are presented in the Appendix A Quality Assurance Data. No constituents of organic or inorganic nature were detected in the equipment rinsates which would indicate inadequate decontamination of sampling equipment.

6.5.4 Field Blanks (Water Blanks)

Field blanks are generally collected of the organic free water purification system which is connected to an onsite public water or well water supply. Water samples were sent for analysis of metals, volatile and extractable organics, pesticides and PCBs. No constituents of any significance were detected.

6.5.5 Duplicate Samples

Field duplicates were collected as a means of quality control from the point of sample collection through all analytical processes. Duplicates were collected for all media sampled except sediment. The Relative Percent Difference (RPD) values calculated for field samples and their duplicates are calculated on positive results only. The RPD values calculated for inorganic analyses of the groundwater, surface water, sediment, and soil, sample/duplicate pairs were: 15.3%, 2.3%, 10%, and 26%, respectively. This indicates that sample/duplicate pairs for those media showed similar results and that the objectives of analyzing duplicate samples were achieved. The organic analytical results showed all non-detects for the sample/duplicate pairs except for dioxins and furans in the sediments and soil which had RPDs of 34% and 22% respectively.

A soil extractable organic analysis RPD was calculated as 26% and was based on detections in three sample/duplicate pairs.

6.6 Precision, Accuracy, Representativeness, Comparability, Completeness

6.6.1 Precision

Precision is the evaluation of the reproducibility of a measurement. Precision is estimated by the analysis of duplicate samples and the calculation of RPD or RSD.

This project involved both the collection of field duplicates and the creation of laboratory duplicates. Field duplicate samples serve as an indicator of overall precision from sample collection through laboratory analysis. Laboratory duplicates focus on precision of the analytical method.

Based on the %RPD results on the duplicate analyses provided above and the goals for soil duplicates of 20% and for aqueous duplicates of 35%, the data has met the criteria.

6.6.2 Accuracy

Accuracy is a measure of the bias in a system. It is the degree of agreement of a measurement with an accepted reference or true value. Accuracy for this project was estimated from the analysis of QC samples whose true values are known (surrogate or matrix spikes) and was expressed as percent recovery. EPA provided performance evaluation samples to the CLP laboratories including spike samples. These were analyzed by the CLP along with the site samples and reported. EPA SESD evaluated and validated the data according to the results reported by the CLP. The reported analytical qualitative and quantitative results of the spike samples were within acceptable limits for accuracy in CLP contract.

6.6.3 Representativeness, Comparability

Representativeness expresses the degree to which data accurately and precisely represent a characteristic of a population at a sampling point, process condition or environmental condition. Comparability expresses the confidence with which one data set can be compared to another. Representativeness and comparability are qualitative objectives which were met by following standard operating procedures for sample collection and analysis.

6.6.4 Completeness

Completeness is the measure of the amount of valid data obtained from a measurement system compared to the amount that was expected to be obtained under current normal conditions.

The completeness of the data set for this investigation is based on the number of valid data points. Data validation and evaluation effects completeness of the data. Some data was rejected. **Tables 6-1, 6-2, and 6-3** present the completeness data.

Table 6-1
Soils Data Completeness

Analytical Fraction	*Total Data Points*	*Valid Data Points*	*Rejected Data Points*	*Data Set Completeness*
Metals	3,151	3,120	31	99.1%
Volatile Organics	4,422	4,409	13	99.7%
Semivolatile Organics	8,694	8,602	92	99.0%
Pesticides/PCBs	4,030	3,680	350	91.3%
Totals	20,297	19,811	486	97.3%

Table 6-2
Sediment Data Completeness

Analytical Fraction	*Total Data Points*	*Valid Data Points*	*Rejected Data Points*	*Data Set Completeness*
Metals	299	292	7	97.6%
Volatile Organics	231	224	7	97.0%
Semivolatile Organics	819	819	0	100.0%
Pesticides/PCBs	364	364	0	100.0%
Dioxins/Furans	286	274	12	95.8%
Totals	1,999	1,973	26	98.1%

Table 6-3
Surface Water Data Completeness

Analytical Fraction	*Total Data Points*	*Valid Data Points*	*Rejected Data Points*	*Data Set Completeness*
Metals	69	69	0	100.0%
Volatile Organics	99	96	3	97.0%
Semivolatile Organics	189	189	0	100.0%
Pesticides/PCBs	84	84	0	100.0%
Totals	441	438	3	99.2%

Table 6-4
Groundwater Data Completeness

Analytical Fraction	*Total Data Points*	*Valid Data Points*	*Rejected Data Points*	*Data Set Completeness*
Metals	322	322	0	100.0%
Volatile Organics	462	462	0	100.0%
Semivolatile Organics	882	868	14	98.4%
Pesticides/PCBs	392	336	56	85.7
Totals	2,058	1,988	70	96.0%

The EPA SESD Work Plan had established a completeness goal of 99% for this project for DQO definitive data analytical results. This goal was not met except for the surface water samples. However, the remaining media and data set completeness was better than 96% which is generally acceptable for this type of sampling and analysis.

6.7 Audits

6.7 Audit Findings

As part of CDM Federal's Quality Assurance Program, various projects are selected quarterly for auditing. Auditing can be either system or performance audits. Performance audits are quantitative checks on different segments of project activity; they are most appropriate for field measurements and for laboratory analysis activities. System audits are qualitive reviews of project activity to check that the overall CDM Federal QA program is functioning and any project-specific QA and QC requirements are being met. System audits are generally performed on a selected number of projects per calendar quarter. This project was not selected for audit of the field activities by CDM Federal Quality Assurance management since EPA performed the field work. However, an office audit of files was performed during March 2001. The audit revealed that the files were complete and organized appropriately.

Section 7
RI Summary and Conclusions

The Georgia Pacific Site was placed on the National Priorities List under the Comprehensive Environmental Response, Compensation, and Liability Act in October 1999, and therefore was designated for an RI/FS. In 1998, EPA initiated the RI/FS to address all contamination at the site. The primary objective of the RI was to provide the additional data needed to support a baseline risk assessment and provide a basis on which to recommend a subsequent remedial action for the site. The RI was divided into five parts:

- A soil sampling investigation (Section 2)
- A surface water/sediment sampling investigation (Section 3)
- A groundwater sampling investigation (Section 4)
- A contaminant transport and fate evaluation (Section 5)
- A baseline risk assessment (submitted separately)

The details of each of these investigations are presented in their appropriate sections and should be consulted for a full understanding of the results of the RI. The major conclusions reached as a result of the RI include the following:

- Analyses of soil samples collected indicate extensive contamination by dioxins/furans, PAHs, PCBs, and inorganics. This contamination seemed to be focused in an area centrally located on the site property where most past operations were located. However, following the removal action, selected contaminated grids and other waste materials located onsite were removed from the site. There was some indication of offsite contamination from site related constituents, however the concentrations were lower than onsite concentration. The results of the baseline risk assessment indicate that while the current human health risks associated with the levels of contamination found in the soils at the site are within EPA's acceptable target range, the potential future human health risks are slightly above EPA's acceptable target range, primarily due to the presence of dioxins/furans, carcinogenic PAHs, and arsenic.

- Surface waters at the site discharge into the Roanoke River. Analyses of surface water and sediment samples collected from the intermittent drainage ditches located onsite indicate significant contamination by arsenic and manganese in surface water, and by dioxins/furans, acetone, methyl ethyl ketone, PAHs, arsenic, lead, and zinc in sediments. The arsenic in sediment does exceed EPA's Region 9 residential risk based guidance. The guidance is used as a screening tool for cleanup. This was taken into consideration for the baseline risk assessment for the site. The vertical extent of the sediment contaminants was not completed during this sampling period. The intent was to evaluate the sediment for direct contact exposure to human or ecological receptors.

The results of the baseline human health risk assessment indicate that both the current and potential future human health risks associated with the levels of contamination found in the intermittent drainage ditches are within EPA's acceptable target range.

- The site is underlain by a surficial unconfined aquifer. Groundwater flow at the site is likely toward the Roanoke River, where it discharges. Data on subsurface lithology was not gathered as part of this RI except during installation of the temporary well points.

  Analyses of groundwater samples at the site indicate significant contamination by arsenic and manganese. The results of the baseline risk assessment indicate that the potential future human health risks associated with the levels of contamination found in the groundwater are significantly above EPA's acceptable target range, primarily due to the presence of arsenic. In addition, the concentrations of some of the contaminants found are above SMCLs.

Based on the results of the RI, the following actions are recommended:

- The former Georgia Pacific property (the Site) is not on the National Priorities List (NPL). Therefore, EPA cannot provide any funding to address the residual contamination identified in this RI report. However, EPA-Region 4 and the NCDENR agree there are several actions the current property owner could pay for (in lieu of a Fund-lead Remedial Action) to provide adequate protection of human health and the environment. These actions include capping several locations in the ditch with clean sand to minimize exposure to potential human or ecological receptors, and using institutional controls such as a Restrictive Covenant to eliminate the future use of contaminated groundwater.

Section 8
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